CF-550B

E Model
GEP Model

SONY
AUTO SHUT OFF
FM/AM STEREO CASSETTE-CORDER
4 SPEAKER

FM/AM STEREO CASSETTE-CORDER

SPECIFICATIONS

GENERAL

Power Requirements: 127, 220 or 240 V ac, 50/60 Hz (GEP model)
100, 110–120 or 220–240 V ac, 50/60 Hz (E model)
6 V dc, four batteries size D (IEC Designation R20), Rechargeable Battery Pack BP-8H (optional)
or 12 V car battery with Sony Car Battery Cord DCC-127H (optional)

Power Consumption: 8 W ac

Power Output: 3 W (1.5 W x 2) max.

Speakers: two speakers 12 x 8 cm (5 x 3½ inches)
two speakers 10 x 7 cm (4 x 3 inches)

Battery Life: Approx. 6 hours of continuous recording from the Built-in Microphones with Long-life Batteries size D

Dimensions: Approx. 334 (w) x 244 (h) x 119 (d) mm
13¼ (w) x 9⅝ (d) x 4¾ (d) inches
including projecting parts and controls not including handle

Weight: Approx. 5.3 kg, 11 lb 11 oz
including batteries

RADIO SECTION

Frequency Range: FM 87.5–108 MHz
AM 530–1,605 kHz

Antennas: FM: Telescopic antenna
External antenna jack
AM: Built-in ferrite-rod antenna

TAPE RECORDER SECTION

Recording System: 4-trach 2-channel stereo or monaural

Fast Winding Time: Approx. 1 min. 30 sec. with Sony Cassette C-60

Frequency Response: 50–10,000 Hz (with standard cassette, with the TAPE SELECT switch set to NORMAL)
50–13,000 Hz (with chromium dioxide cassette, with the TAPE SELECT switch set to CrO_2)

S/N Ratio: 45 dB

Total Harmonic Distortion: 2.5%

Wow and Flutter: 0.22% (WRMS)

Inputs: MIC .... 2 (minijack)
sensitivity 0.2 mV (–72 dB)
for low impedance microphone
LINE IN .... 2 (phono jack)
sensitivity 0.06 V (–22 dB)
input impedance 100 kilohms

– Continued on page 2 –

SONY®

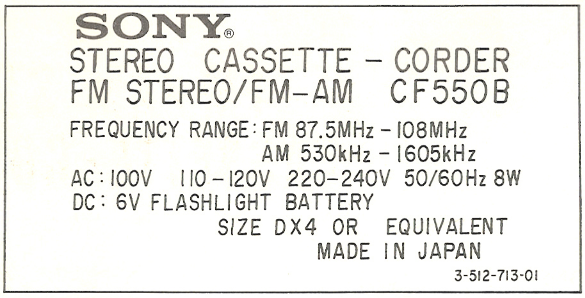
SERVICE MANUAL

Outputs: LINE OUT .... 2 (phono jack)
rated output 0.78V (0 dB) at
load impedance 100 kilohms
load impedance 10 kilohms or higher
HEADPHONE ...... 1 (stereo binaural jack)

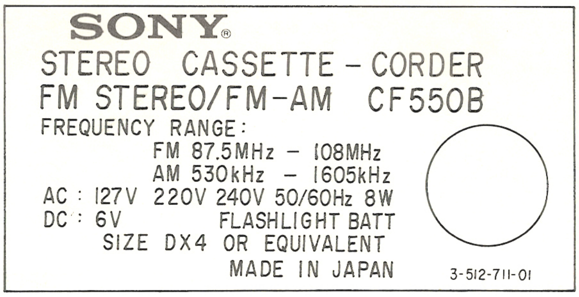
Other Jack: Remote control jack 1

IDENTIFICATION OF SET

(E model)


SONY®
STEREO CASSETTE - CORDER
FM STEREO/FM-AM CF550B
FREQUENCY RANGE: FM 87.5MHz - 108MHz
AM 530kHz - 1605kHz
AC: 100V 110 - 120V 220-240V 50/60Hz 8W
DC: 6V FLASHLIGHT BATTERY
SIZE DX4 OR EQUIVALENT
MADE IN JAPAN
3-512-713-01

(GEP model)


SONY®
STEREO CASSETTE - CORDER
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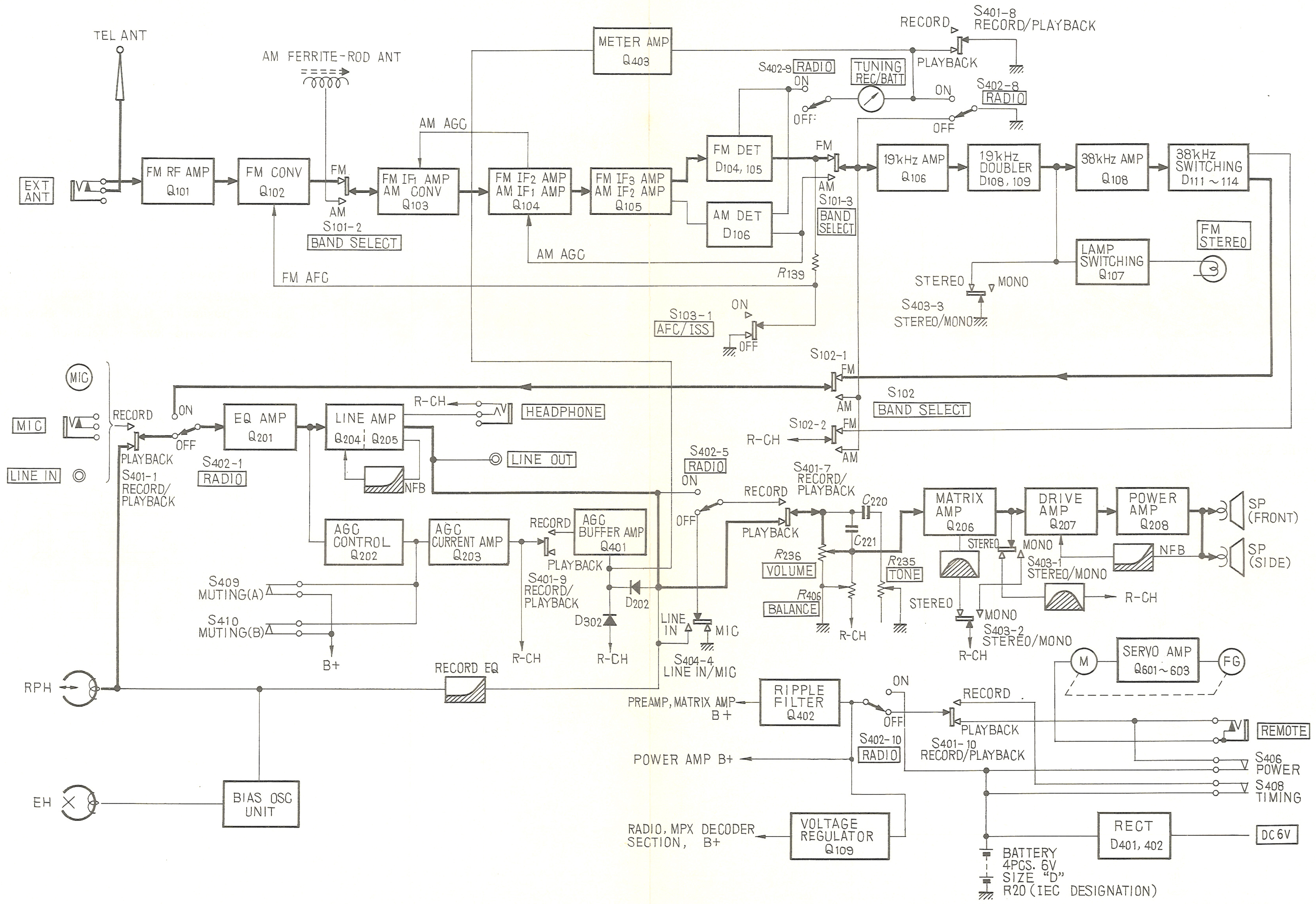
FREQUENCY RANGE:
FM 87.5MHz - 108MHz
AM 530kHz - 1605kHz
AC : 127V 220V 240V 50/60Hz 8W
DC : 6V FLASHLIGHT BATT
SIZE DX4 OR EQUIVALENT
MADE IN JAPAN
3-512-711-01

SECTION 1
OUTLINE

1-1. BLOCK DIAGRAM

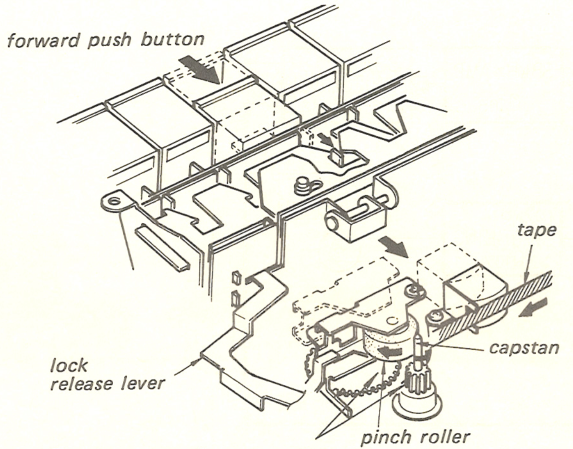

TEL ANT
AM FERRITE-ROD ANT
EXT ANT
FM RF AMP Q101
FM CONV Q102
FM
AM
S101-2 BAND SELECT
AM AGC
FM IF1 AMP AM CONV Q103
FM IF2 AMP AM IF1 AMP Q104
FM IF3 AMP AM IF2 AMP Q105
METER AMP Q403
FM DET D104, 105
AM DET D106
FM AFC
AM AGC
R139
S101-3 BAND SELECT
S103-1 AFC/ISS
ON
OFF
S402-9 RADIO
TUNING REC/BATT
RECORD
PLAYBACK
S401-8 RECORD/PLAYBACK
S402-8 RADIO
19kHz AMP Q106
19kHz DOUBLER D108, 109
38kHz AMP Q108
38kHz SWITCHING D111 ~ 114
LAMP SWITCHING Q107
FM STEREO
STEREO
MONO
S403-3 STEREO/MONO
S102-1
S102 BAND SELECT
S102-2
R-CH
MIC
LINE IN
RECORD
PLAYBACK
S401-1 RECORD/PLAYBACK
S402-1 RADIO
EQ AMP Q201
LINE AMP Q204 Q205
NFB
HEADPHONE
LINE OUT
AGC CONTROL Q202
AGC CURRENT AMP Q203
AGC BUFFER AMP Q401
S401-9 RECORD/PLAYBACK
S409 MUTING(A)
S410 MUTING(B)
B+
D302
D202
S402-5 RADIO
S401-7 RECORD/PLAYBACK
S404-4 LINE IN/MIC
C220
C221
R236 VOLUME
R406 BALANCE
R235 TONE
MATRIX AMP Q206
DRIVE AMP Q207
POWER AMP Q208
S403-1 STEREO/MONO
S403-2 STEREO/MONO
SP (FRONT)
SP (SIDE)
RECORD EQ
RPH
EH
BIAS OSC UNIT
SERVO AMP Q601 ~ 603
M
FG
PREAMP, MATRIX AMP B+
RIPPLE FILTER Q402
S402-10 RADIO
S401-10 RECORD/PLAYBACK
REMOTE
S406 POWER
S408 TIMING
POWER AMP B+
RADIO, MPX DECODER SECTION, B+
VOLTAGE REGULATOR Q109
RECT D401, 402
DC6V
BATTERY 4PCS. 6V SIZE "D" R20 (IEC DESIGNATION)

1-2. AUTOMATIC SHUT-OFF MECHANISM OPERATION

The CF-550B mechanism is designed so that the set turns off automatically at the tape end in record and playback modes.

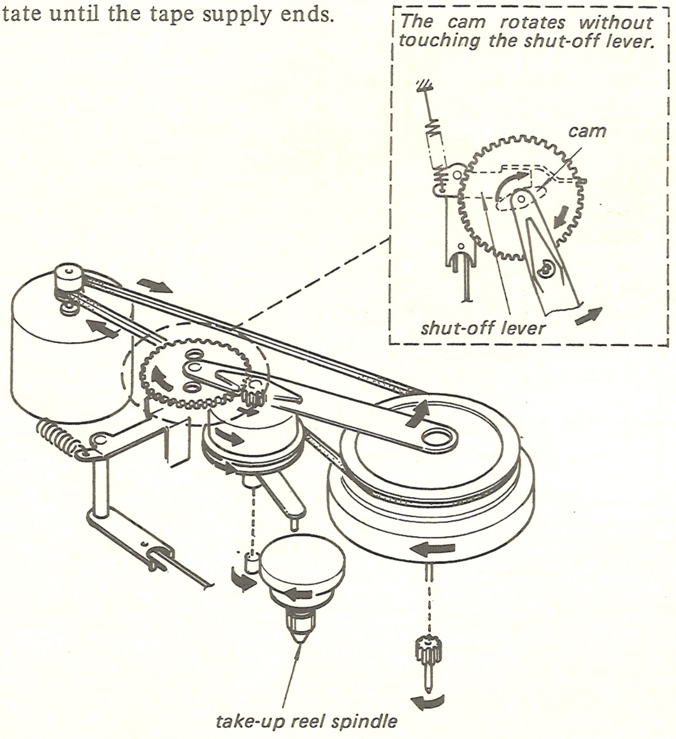
As an example, the operation in playback mode describes step by step in numerical order.

1 Normal operation in playback mode.


forward push button
tape
capstan
lock release lever
pinch roller

The two gears do not mesh.

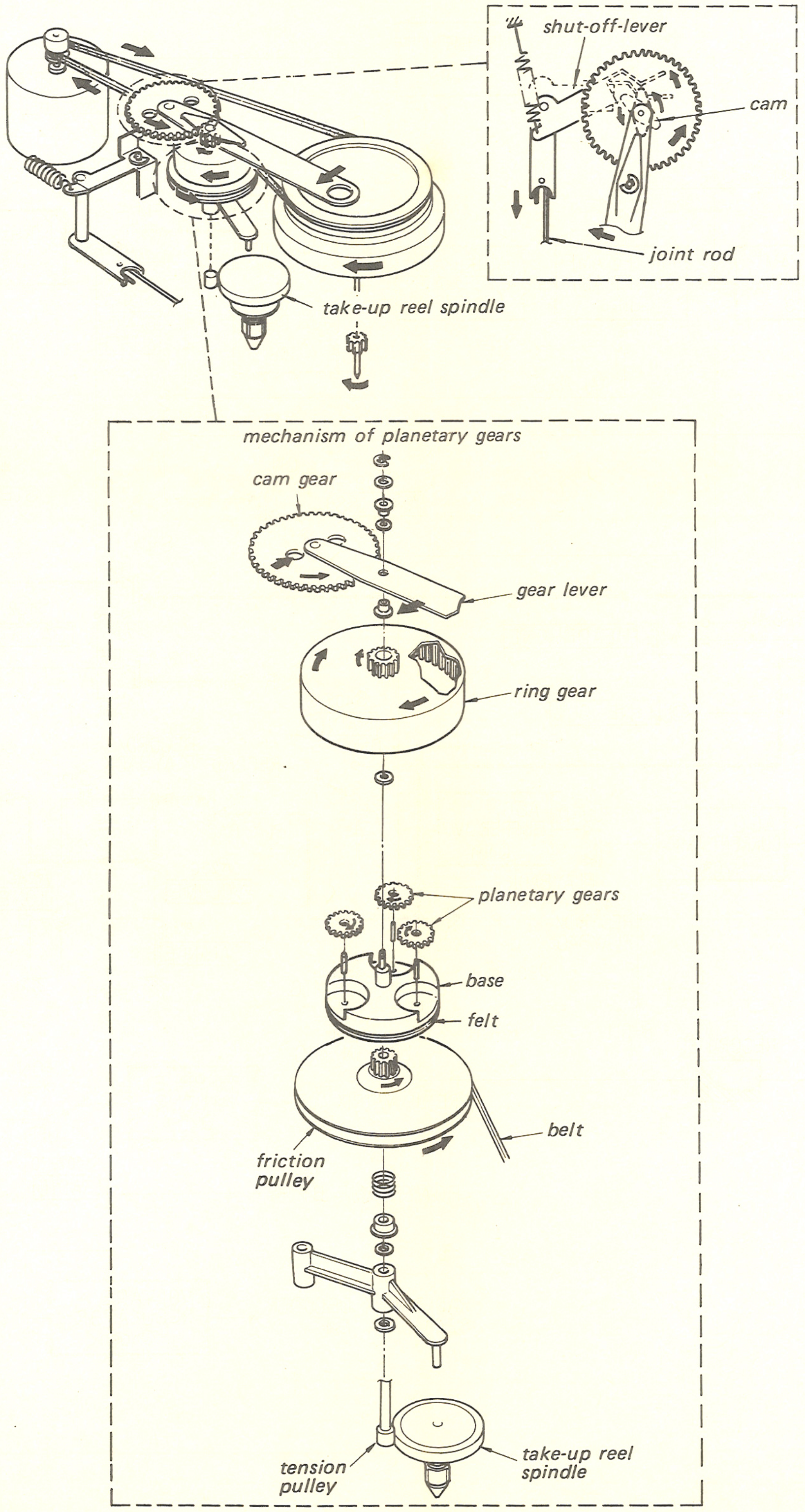
2 The take-up reel spindle keeps to rotate until the tape supply ends.


cam
shut-off lever
take-up reel spindle

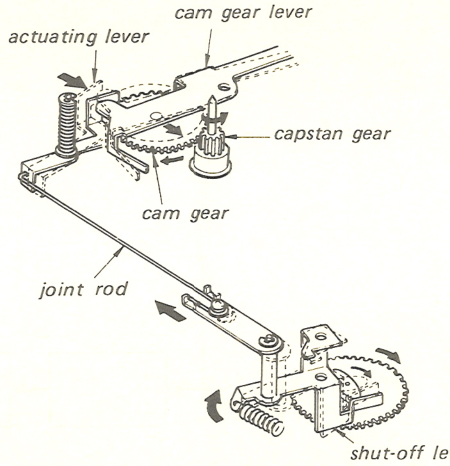
The cam rotates without touching the shut-off lever.

3 When the tape supply ends, the take-up reel spindle stops. The each part moves due to the planetary gear operation.

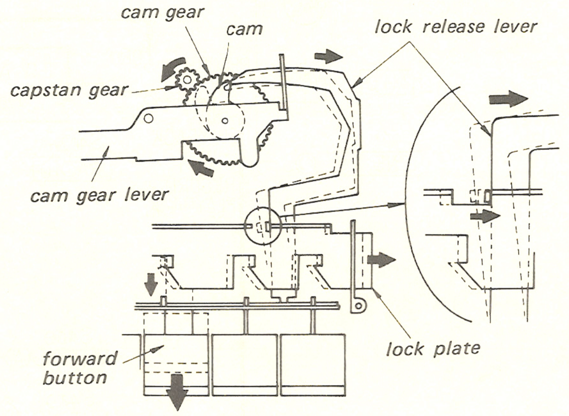
The cam pushes the shut-off lever, then pushes the joint rod in the direction shown by the arrow.


shut-off-lever
cam
joint rod
take-up reel spindle
mechanism of planetary gears
cam gear
gear lever
ring gear
planetary gears
base
felt
belt
friction pulley
tension pulley
take-up reel spindle

4 By the joint rod movement, the cam gear contacts the capstan gear.


cam gear lever
actuating lever
capstan gear
cam gear
joint rod
shut-off lever

5 By the capstan gear rotation, the cam gear rotates. The cam pushes the lock release lever. Then the lock plate is pushed in the direction shown by the arrow. So, the forward lever is released, the set turns off.


cam gear
cam
lock release lever
capstan gear
cam gear lever
forward button
lock plate

1-3. MATRIX SOUND STEREO DESCRIPTION

[Four Speaker Matrix Sound Stereo]

This model employs two pairs of speakers installed as shown in Fig. 1 and Matrix Sound Amplifiers between preamplifiers and power amplifiers. Through L-channel speakers, L-channel sound and some part of phase reversed R-channel sound (-KR) or L–KR appear and similarly through R-channel speakers, R-channel sound and some part of phase reversed L-channel sound (-KL) or R–KL. (Here K is the sound pressure ratio.)

And the sounds L–KR and R–KL are combined for stereo effect in the air space in front.

Considering L-channel sound only for example, L-channel sound appearing through L-channel speakers and some part of phase reversed L-channel sound (-KL) appearing through R-channel speakers are combined to produce L′ vector sound which sounds as if its sound source is transfered to SP (L′) along L′ vector.

The side speakers SP (L2) and SP (R2) widen the sound field by the effect of reflected sounds from walls and also prevent the cancellation of lower frequency sound.

[Matrix Sound Stereo Circuit]

Matrix Sound Stereo Circuit is shown in Fig. 2. When signals–L and –R are delivered into bases of Q206 and Q306 respectively, signals L and R appear on collectors of Q206 and Q306 and signals -L and -R on emitters of Q206 and Q306.

Considering L-channel, signal –KR through CR filter from emitter of Q306 as well as signal L appears and they are combined to produce signal L–KR and delivered into power amplifier. (0 < KL < R)

Emitter side filters of Q206 and Q306 work as frequency and phase compensators to emphasis the stereo effect.

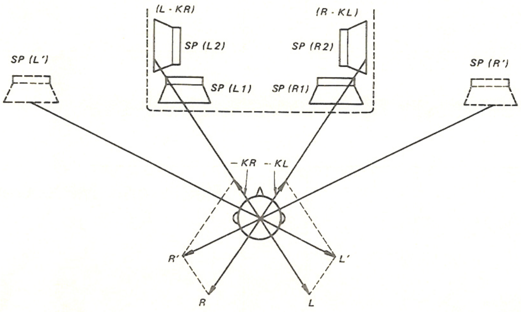

(L - KR)
(R - KL)
SP (L2)
SP (R2)
SP (L′)
SP (R′)
SP (L1)
SP (R1)
– KR
– KL
R′
L′
R
L

Fig. 1.

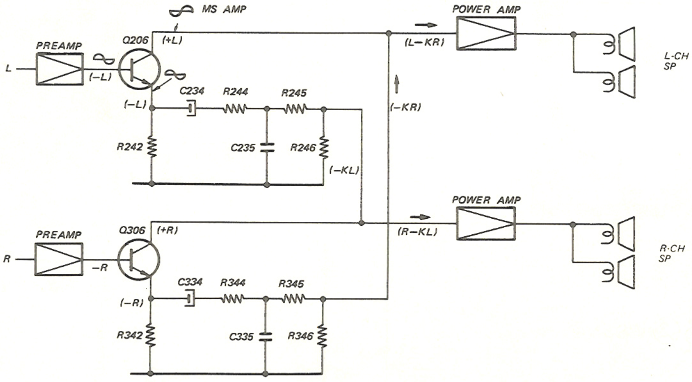
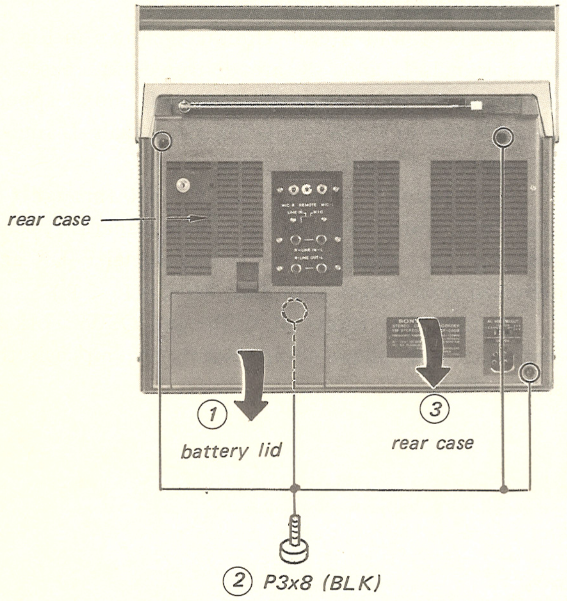

MS AMP
POWER AMP
PREAMP
Q206
(+L)
(L–KR)
L
(–L)
C234
R244
R245
(–L)
(–KR)
R242
C235
R246
(–KL)
L-CH
SP
POWER AMP
PREAMP
Q306
(+R)
(R–KL)
R
–R
C334
R344
R345
(–R)
R342
C335
R346
R-CH
SP

Fig. 2.

SECTION 2
DISASSEMBLY

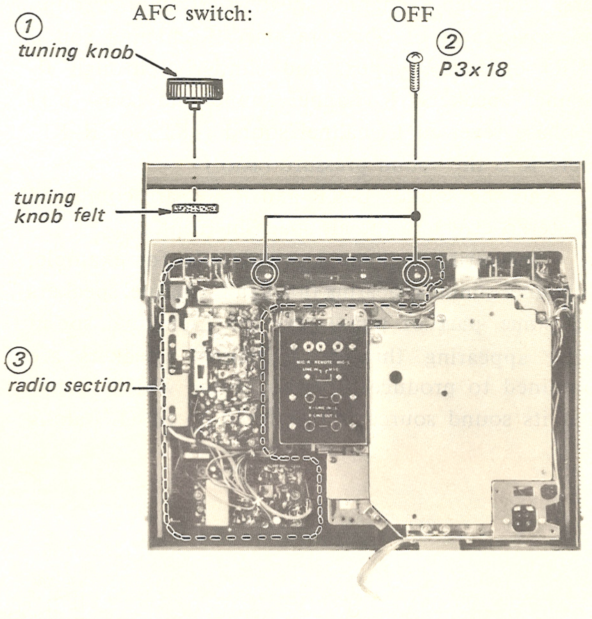
2-1. REMOVALS

Rear Case

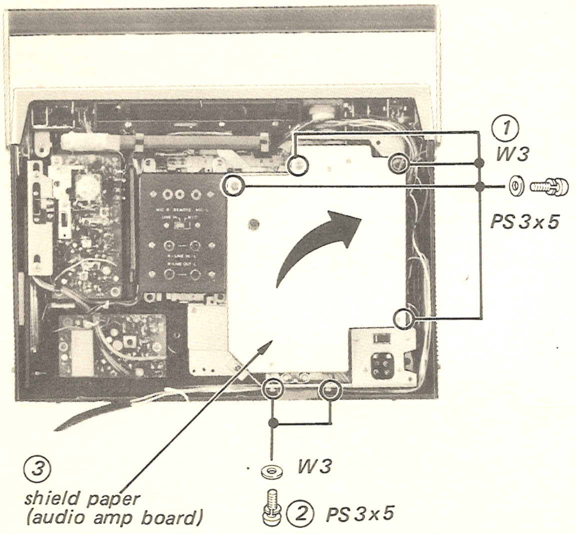

rear case
① battery lid
③ rear case
② P3x8 (BLK)

Radio Section

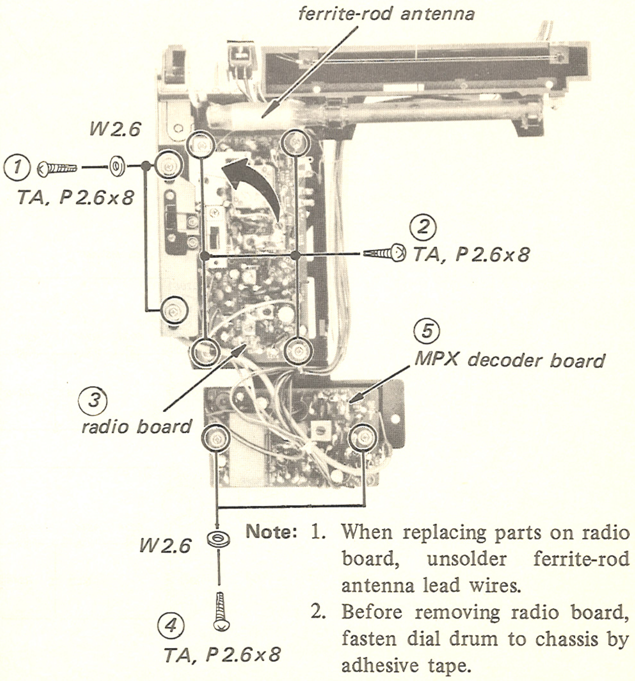
Note: BAND SELECT switch: AM
AFC switch: OFF


① tuning knob
② P3x18
tuning knob felt
③ radio section

Audio Amp Board


① W3
PS3x5
③ shield paper (audio amp board)
W3
② PS3x5

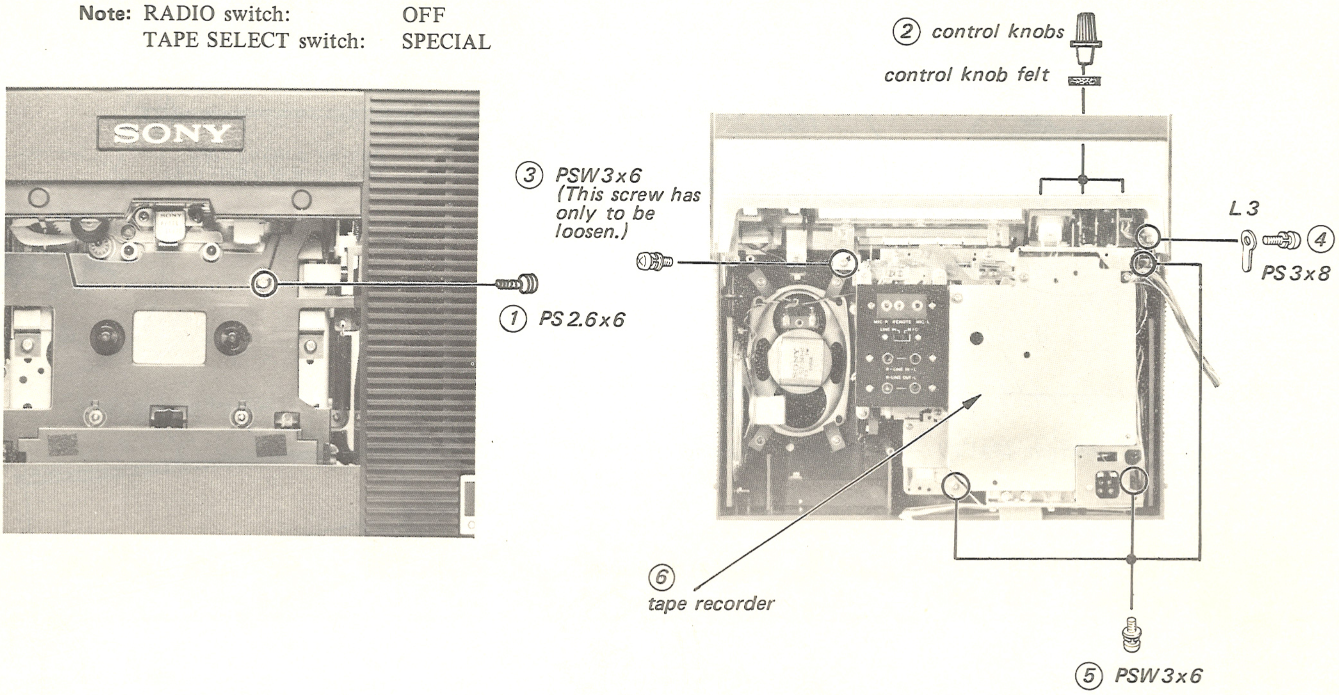
Radio and MPX Decoder Boards


ferrite-rod antenna
W2.6
① TA, P2.6x8
② TA, P2.6x8
⑤ MPX decoder board
③ radio board
W2.6
④ TA, P2.6x8

Note:
1. When replacing parts on radio board, unsolder ferrite-rod antenna lead wires.
2. Before removing radio board, fasten dial drum to chassis by adhesive tape.

Tape Recorder

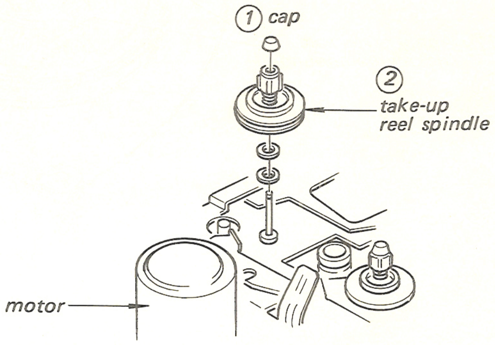
Note: RADIO switch: OFF
TAPE SELECT switch: SPECIAL


② control knobs
control knob felt
③ PSW3x6
(This screw has only to be loosen.)
① PS2.6x6
L3
④ PS3x8
⑥ tape recorder
⑤ PSW3x6

2-2. DIAL CORD STRINGING

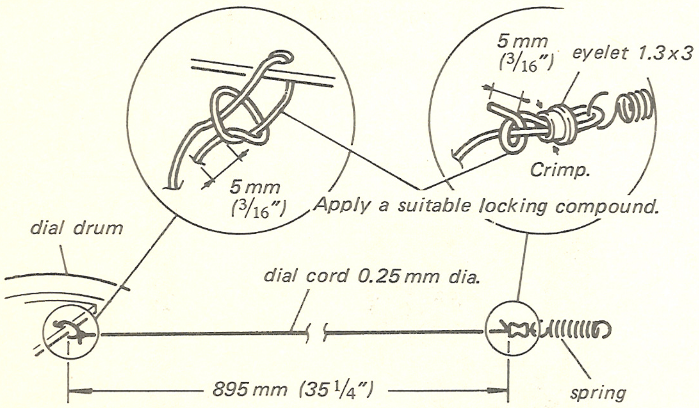
(See page 10)

Take-up Reel Spindle


① cap
② take-up reel spindle
motor

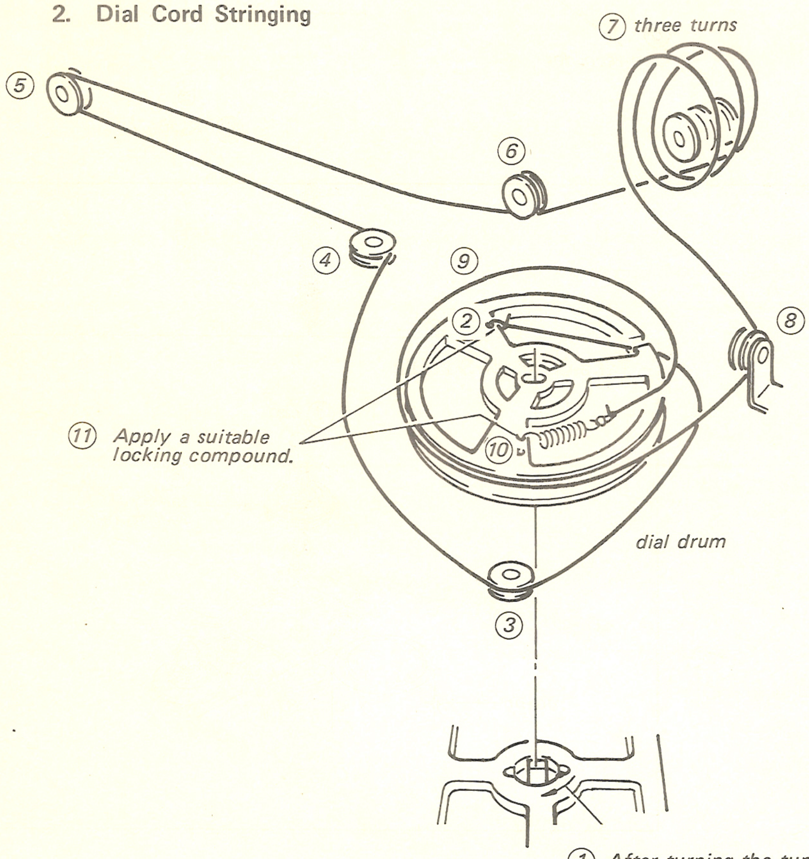
2-2. DIAL CORD STRINGING

1. Dial Cord Preparation


5 mm (3/16")
eyelet 1.3x3
Crimp.
5 mm (3/16")
dial drum
dial cord 0.25 mm dia.
895 mm (35 1/4")
spring

Apply a suitable locking compound.

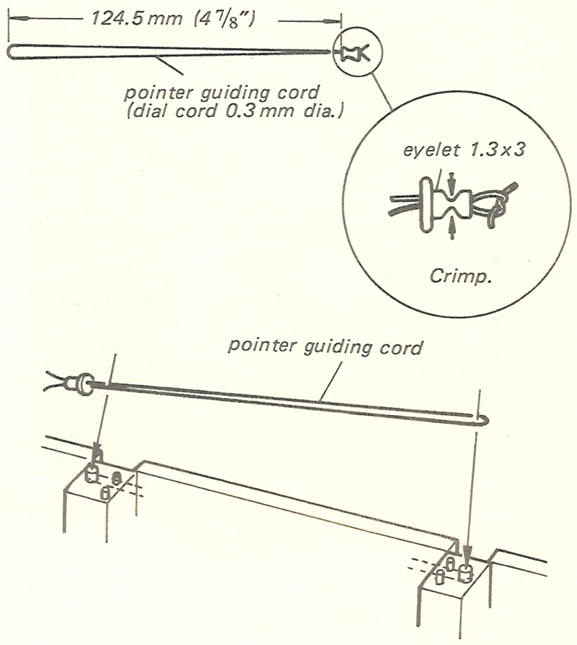
2. Dial Cord Stringing


⑦ three turns
⑤
⑥
④
⑨
②
⑧
⑩
③
dial drum

⑪ Apply a suitable locking compound.

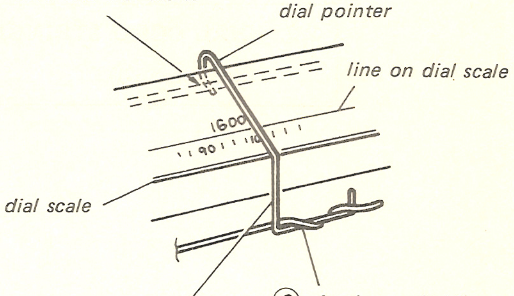
① After turning the tuning capacitor shaft fully clockwise, attach the dial drum.

3. Pointer Guiding Cord Installation


124.5 mm (4 7/8")
pointer guiding cord (dial cord 0.3 mm dia.)
eyelet 1.3x3
Crimp.
pointer guiding cord

4. Dial Pointer Installation

① Insert dial pointer between pointer guiding cord and dial scale.


dial pointer
line on dial scale
1600
90
dial scale

③ Apply a suitable locking compound.

② Set dial pointer to 100.

SECTION 3
ADJUSTMENT

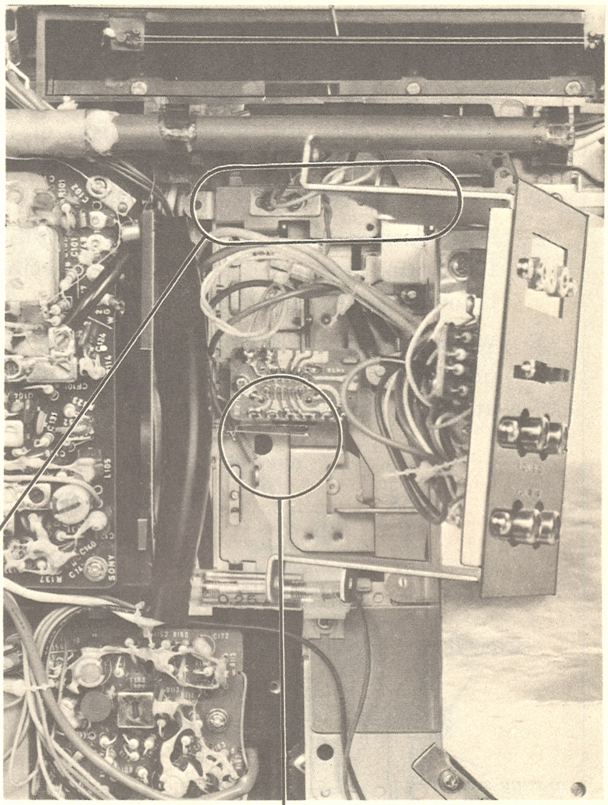
3-1. MECHANICAL ADJUSTMENT

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:

record/playback head	pinch roller
erase head	rubber belts
capstan	idlers

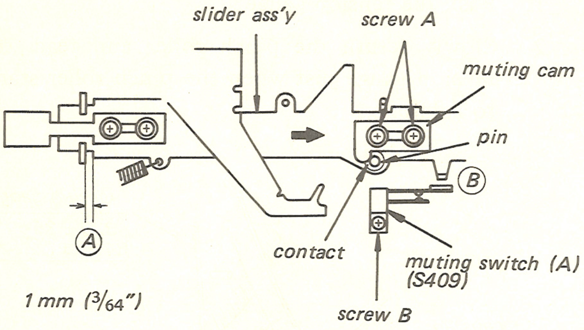
2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply a suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.



Muting Switch (A) (S409) Adjustment

This switch prevents click noise produced when tuning record/playback switch.

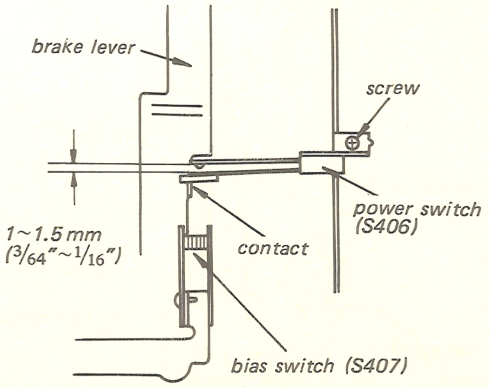
1. Loosen the screw A and position the muting cam to contact the pin when the clearance at Ⓐ is 1 mm (3/64").
2. Loosen the screw B and position the muting switch (A) for no clearance at Ⓑ when the slider ass'y is moved completely in the direction shown by the arrow.


slider ass'y
screw A
muting cam
pin
Ⓑ
Ⓐ
contact
muting switch (A) (S409)
screw B
1 mm (3/64")

Power Switch (S406) Adjustment

– Stop mode –

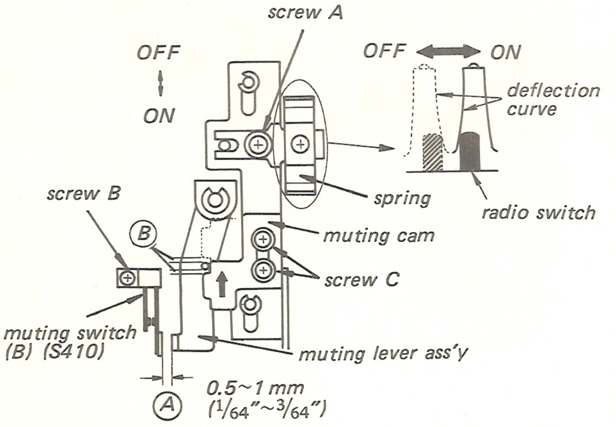
Note: When slowly pressing the FORWARD button, make sure that the power switch (S406) turns on and then bias switch (S407) in changed.

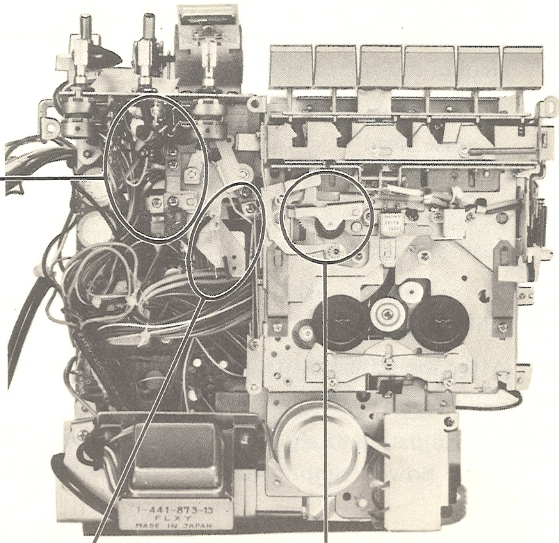

brake lever
screw
power switch (S406)
1~1.5 mm (3/64"~1/16")
contact
bias switch (S407)

Muting Switch (B) (S410) Adjustment

This switch prevents click noises produced when turning the RADIO switch on or off.

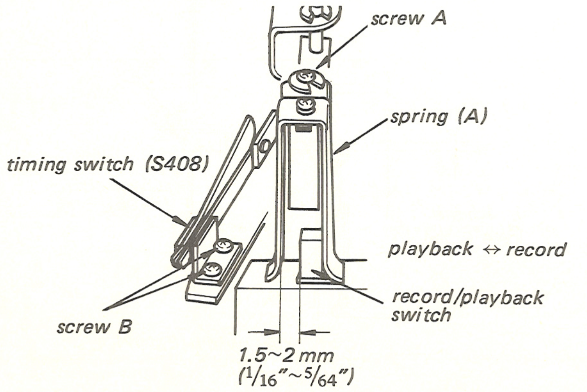
1. When turning the RADIO switch on or off, make sure that the deflection curves of the spring are the same. If necessary, loosen the screw A and change the spring position.
2. When turning the RADIO switch off, position the muting switch (B) (S410) for the specified clearance at Ⓐ by loosing the screw B.
3. When turning the RADIO switch on or off, position the muting cam for the same clearances at Ⓑ by loosing the screw C.


screw A
OFF
ON
OFF ↔ ON
deflection curve
spring
radio switch
screw B
Ⓑ
muting cam
screw C
muting switch (B) (S410)
muting lever ass'y
0.5~1 mm (1/64"~3/64")
Ⓐ


1-441-873-13
FLXY
MADE IN JAPAN

Timing Switch (S408) Adjustment

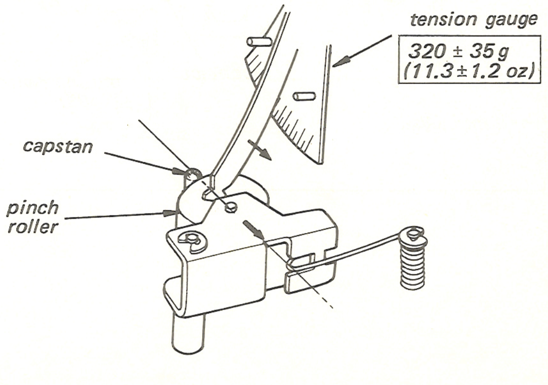
1. When pressing the RECORD button, position the spring (A) for the specified clearance by loosing screw A as shown below.
2. When slowly pressing the RECORD button, make sure that the timing switch turns on and then the record/playback switch turns to record. If necessary, loosen the screw B and change the timing switch position.


screw A
spring (A)
timing switch (S408)
playback ↔ record
record/playback switch
screw B
1.5~2 mm (1/16"~5/64")

Pinch Roller Pressure Adjustment

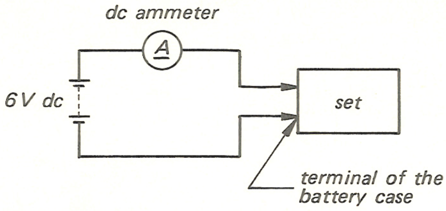
– Playback mode –

1. Push the tension gauge.
2. Slowly return the pinch roller and read the tension gauge just when the pinch roller starts to rotate.

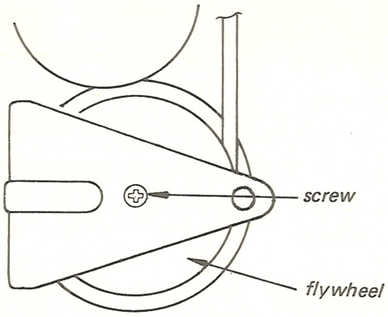

tension gauge
320 ± 35 g (11.3 ± 1.2 oz)
capstan
pinch roller

Flywheel Thrust Play Adjustment

Procedure:


dc ammeter
A
6 V dc
set
terminal of the battery case

1. Place the set horizontally and reel-spindle-side-down.
2. Loosen the screw by turning it counterclockwise.
3. Carefully turn the screw clockwise until current suddenly increases.
   Then, turn the screw 1/8 turn counterclockwise.


screw
flywheel

Reference Data

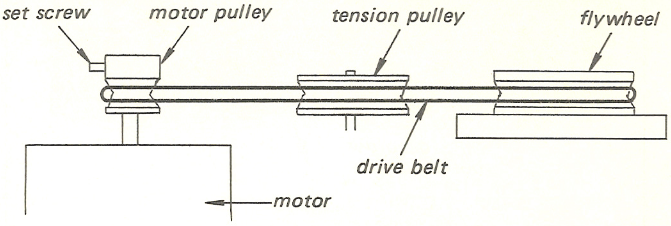
○	Forward Torque:	40–60 g.cm (0.56–0.84 oz.inch)
○	First Forward, Rewind Torque:	70–150 g.cm (0.98–2.0 oz.inch)
○	Wow and Flutter:	less than 0.35% (RMS)

Motor Pulley Height Adjustment

After replacing the motor pulley or the flywheel, this adjustment should be performed.

Procedure:

1. Keep the set horizontal.
2. Adjust the motor pulley height so that the drive belt is straight without twist.


set screw
motor pulley
tension pulley
flywheel
drive belt
motor

3-2. ELECTRICAL ADJUSTMENT

TAPE RECORDER SECTION

Note: The adjustments should be performed in the order given in this service manual. The adjustments should be performed for both L-CH and R-CH.

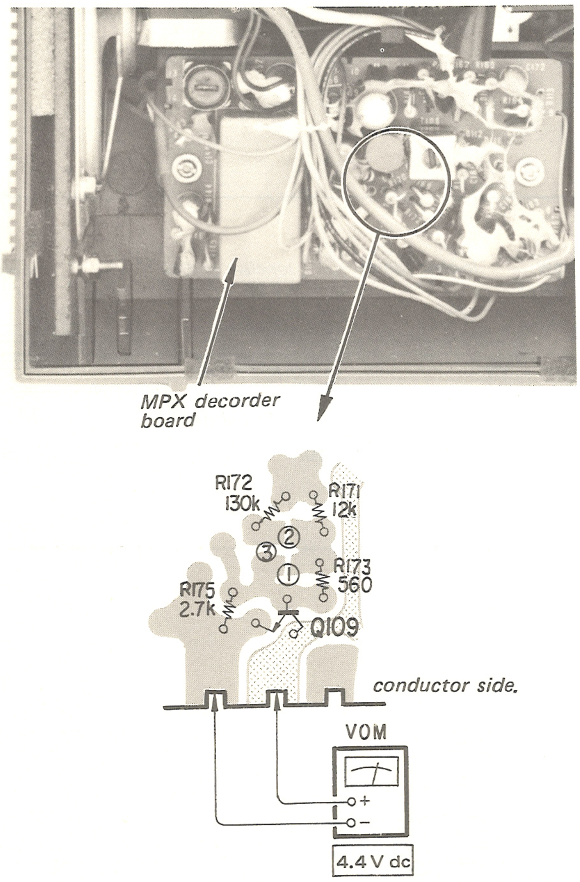
Radio B+ Voltage Adjustment

Setting:

Power supply voltage:	6V dc
BAND switch:	FM
RADIO switch:	ON
VOLUME control:	MIN
Tuning:	detuned

Adjustment Location and Specification:

Pattern connection	B+ Voltage
open	high
①	↕
① and ②	
③	low


MPX decorder board
R172
130k
R171
12k
②
③
①
R173
560
R175
2.7k
Q109
conductor side.
VOM
+
−
4.4 V dc

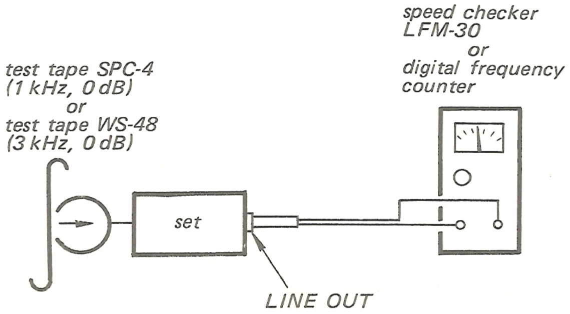
Tape Speed Adjustment

Setting:

VOLUME control:	mechanical mid
RADIO switch:	OFF

Procedure:

Mode: playback

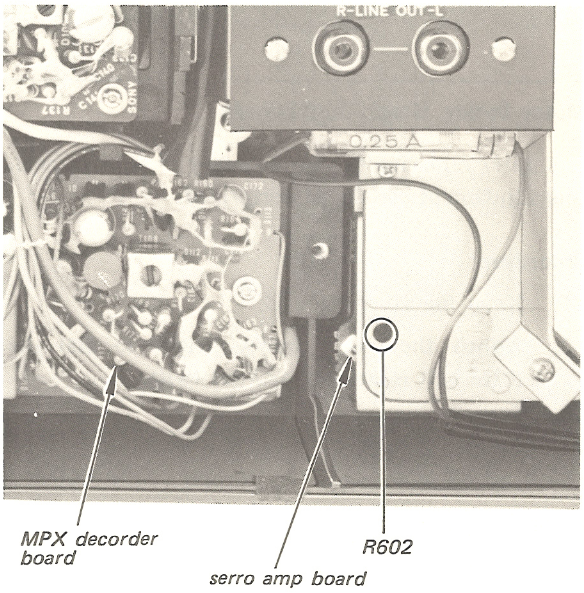

speed checker LFM-30 or digital frequency counter
test tape SPC-4 (1 kHz, 0 dB) or test tape WS-48 (3 kHz, 0 dB)
set
LINE OUT

Specification:

Speed checker	Digital frequency counter
−2−+2.5%	980−1,025 Hz (SPC-4) 2,940−3,075 Hz (WS-48)

Frequency difference between begining and end of tape should be within 1% (10 Hz; SPC-4 or 30 Hz; WS-48).

Adjustment Location:

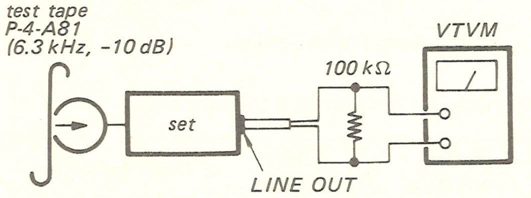

R-LINE OUT-L
0.25 A
MPX decorder board
R602
serro amp board

Record/playback Head Azimuth Adjustment

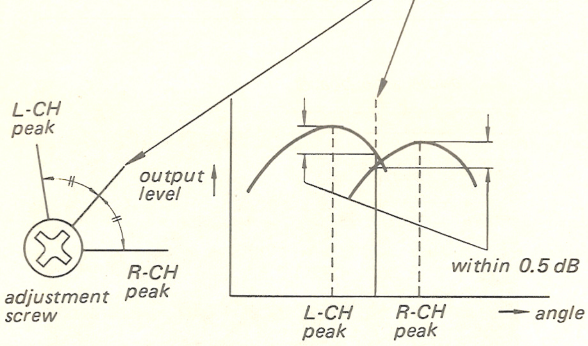
Setting:

RADIO switch:	OFF
VOLUME control:	mechanical mid
STEREO/MONO switch:	STEREO

1. Mode: playback

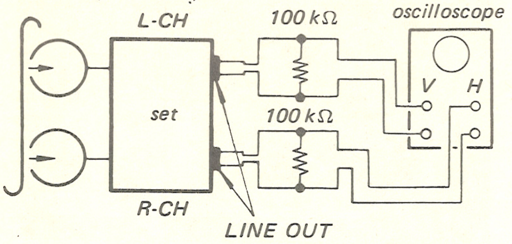

test tape
P-4-A81
(6.3 kHz, -10 dB)
VTVM
100 kΩ
set
LINE OUT

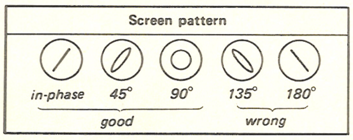
2. Turn the adjustment screw for the maximum level and set it the mechanical mid position of L-CH and R-CH peak position.


L-CH
peak
output level
R-CH
peak
adjustment
screw
within 0.5 dB
L-CH
peak
R-CH
peak
angle

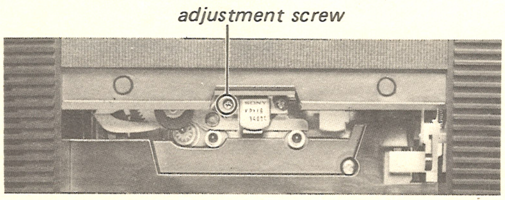
3. Mode: playback

P-4-A81
(6.3 kHz, -10 dB)


L-CH
100 kΩ
oscilloscope
V
H
set
100 kΩ
R-CH
LINE OUT


Screen pattern
in-phase
45°
90°
135°
180°
good
wrong

Adjustment Location:

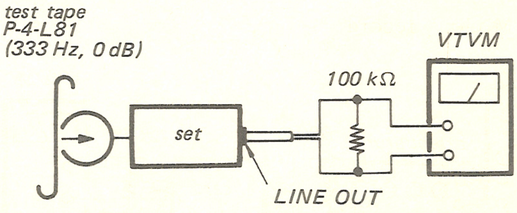

adjustment screw

Playback Level Adjustment

Setting:

RADIO switch:	OFF
TAPE SELECT switch:	NORMAL
STEREO/MONO switch:	STEREO

Procedure:


test tape
P-4-L81
(333 Hz, 0 dB)
VTVM
100 kΩ
set
LINE OUT

Specification:

LINE OUT level: 0.775 V–1.2 V
(0 dB–4 dB)

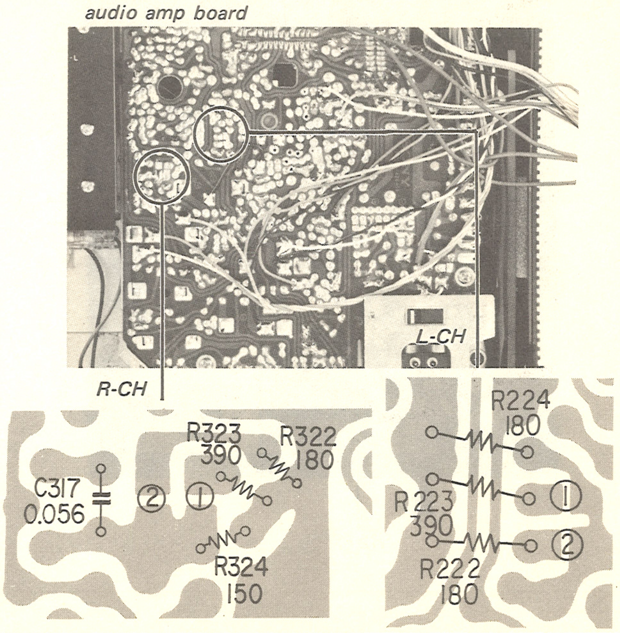
Level difference between channels:
less than 1.5 dB

Check that LINE OUT level does not change in playback mode while changing the mode from playback to stop several times.

Adjustment Location:

Pattern connection

Pattern connection	LINE OUT Level
① and ②	high
①	↕
open	low


audio amp board
L-CH
R-CH
R323
390
R322
180
C317
0.056
②
①
R324
150
R224
180
R223
390
R222
180
①
②

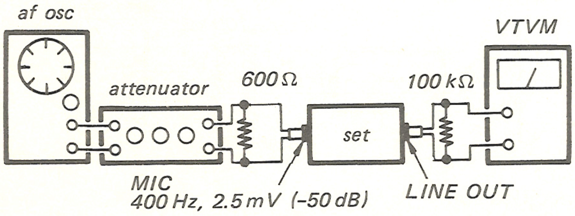
AGC Balance Adjustment

Setting:

MIC/LINE IN switch:	MIC
STEREO/MONO switch:	STEREO
RADIO switch:	OFF

Procedure:

1. Mode: record

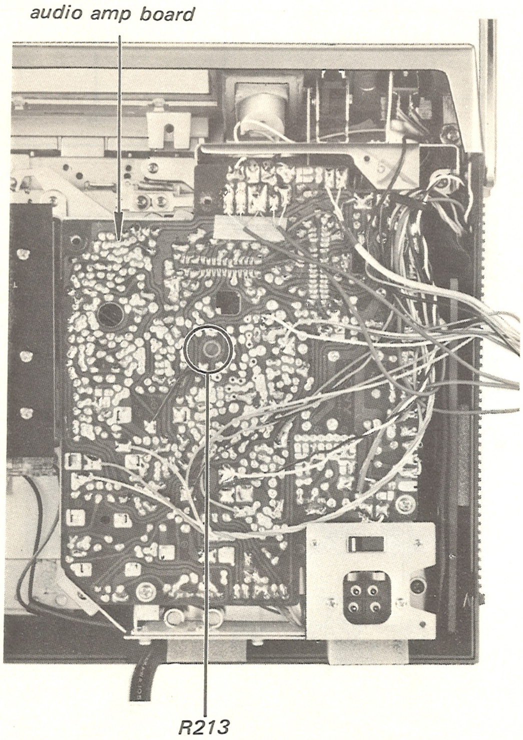

af osc
VTVM
attenuator
600 Ω
100 kΩ
set
MIC
400 Hz, 2.5 mV (-50 dB)
LINE OUT

2. Adjust R213 so that LINE OUT level of L-CH becomes the same as R-CH.
3. Decrease the input level to 0.77 mV (-60 dB).
4. Measure LINE OUT levels of both L-CH and R-CH.

Specification:

LINE OUT level difference between
L-CH and R-CH: within 3 dB

Adjustment Location:


audio amp board
R213

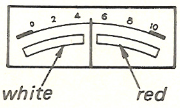
Battery Meter Calibration

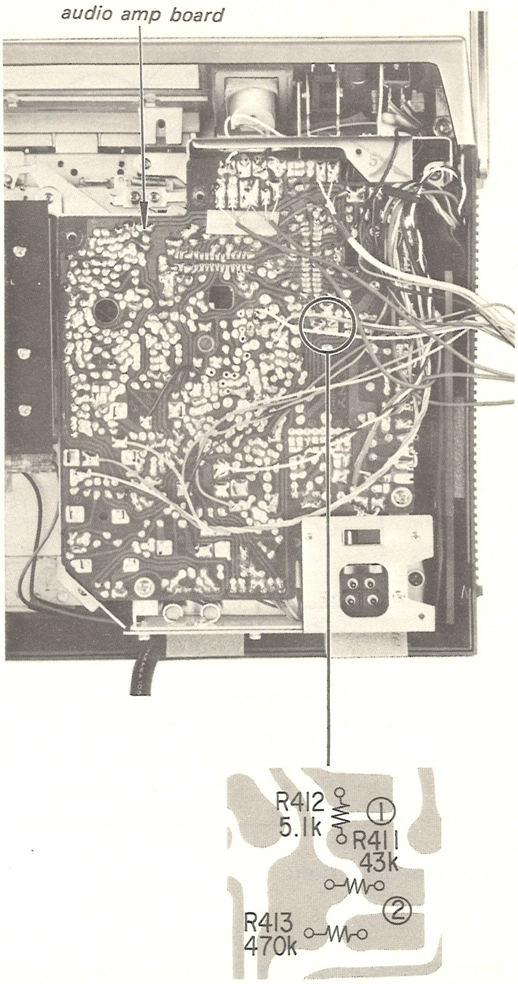
Setting:

Power Supply Voltage:	4.4 V dc
VOLUME control:	minimum
RADIO switch:	OFF
Mode:	playback with no cassette loaded

Note: Keep the set vertical.

Adjustment Location and Specification:

Pattern connection	Pointer deflection	Meter indication
open	red region	 0 2 4 6 8 10 white red
①	↕	
① and ②	white region	


audio amp board
R412
5.1k
①
R411
43k
②
R413
470k

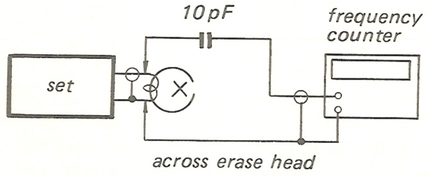
Bias Osc Frequency Adjustment

Setting:

TAPE SELECT switch: NORMAL
RADIO switch: OFF

Procedure:

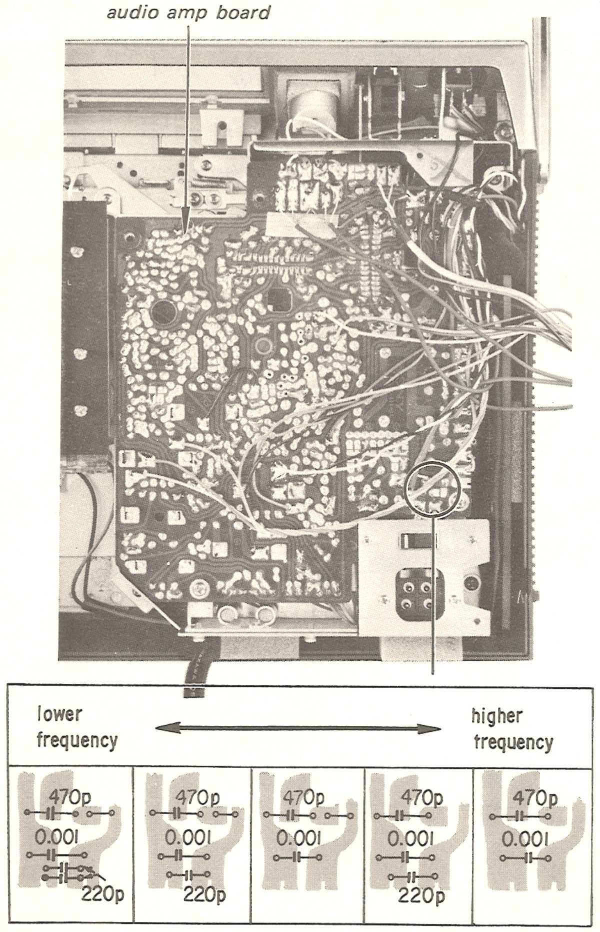
Mode: record (no signal input)


10 pF
frequency counter
set
across erase head

Specification:

AFC/ISS switch:	ON
	79.2 kHz–84.8 kHz
AFC/ISS switch:	OFF
	82 kHz–87 kHz

Adjustment Location:


audio amp board
lower frequency
higher frequency
470p
0.001
220p
470p
0.001
220p
470p
0.001
470p
0.001
220p
470p
0.001

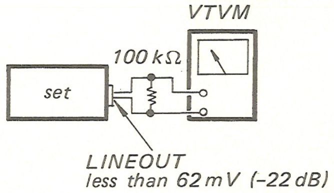
Bias Leakage Adjustment

Setting:

RADIO switch: OFF
MIC/LINE IN switch: LINE IN
AFC/ISS switch: OFF

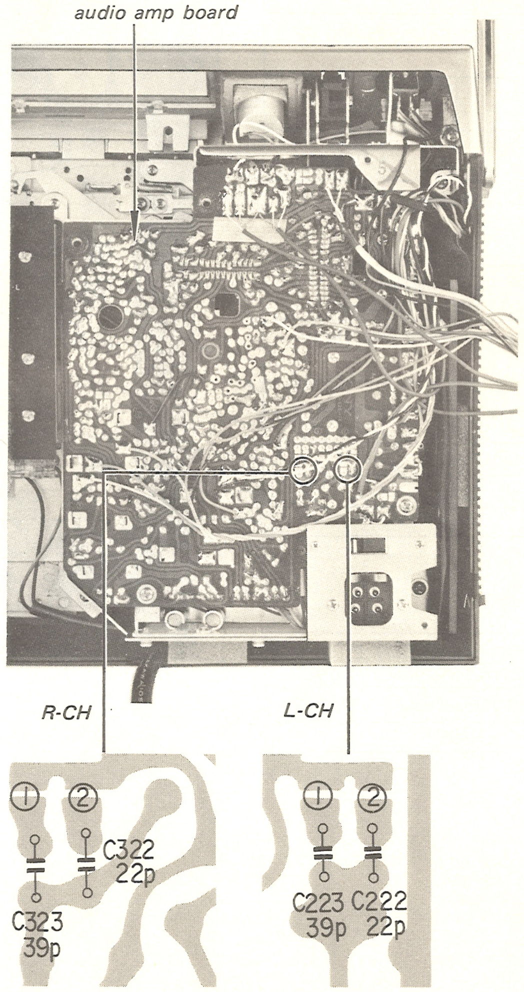
Procedure:

Mode: record (no signal input)


VTVM
100 kΩ
set
LINEOUT
less than 62 mV (−22 dB)

Adjust pattern connection for the specified reading on VTVM.

Adjustment Location:


audio amp board
R-CH
L-CH
①
②
C322 22p
C323 39p
①
②
C223 39p
C222 22p

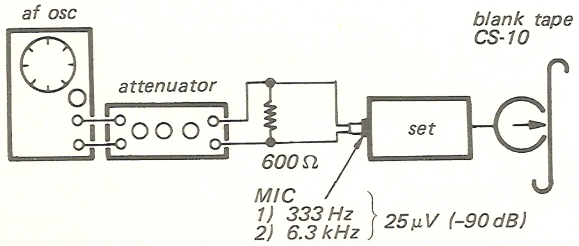
Record Bias Adjustment

Setting:

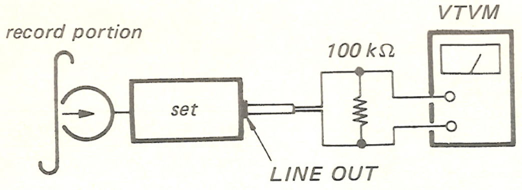
TONE control: HIGH
RADIO switch: OFF
TAPE SELECT switch: NORMAL
MIC/LINE IN switch: MIC

Procedure:

1. Mode: record


af osc
attenuator
600 Ω
set
blank tape CS-10
MIC
1) 333 Hz
2) 6.3 kHz
25 μV (−90 dB)

2. Mode: playback


record portion
set
100 kΩ
VTVM
LINE OUT

Specification:

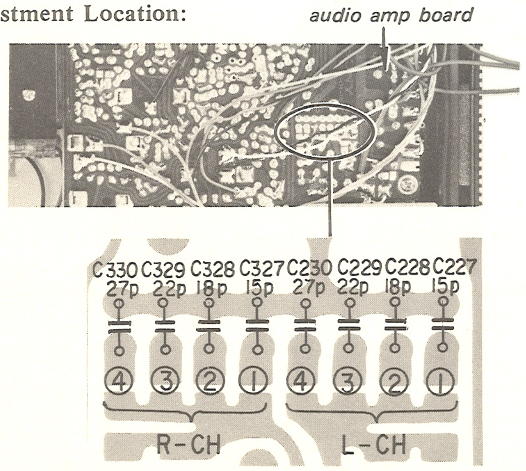
6.3 kHz Level difference from 333 Hz:
within ± 2 dB

1.

Pattern connection	6.3 kHz VTVM reading
①	up
②	↑
③	↓
④	down

2. If necessary, repeat above steps.

Adjustment Location:


audio amp board
C330 27p
C329 22p
C328 18p
C327 15p
C230 27p
C229 22p
C228 18p
C227 15p
④ ③ ② ①
④ ③ ② ①
R-CH
L-CH

RADIO SECTION

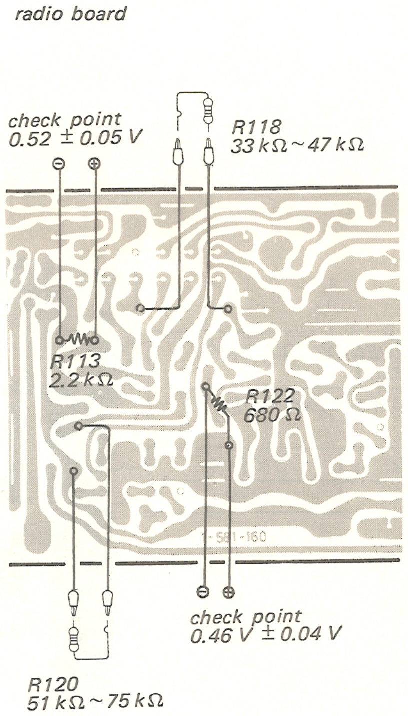
I-F Section DC Current Adjustment

Note: Purpose of this adjustment is to get optimum bias voltages for Q103 and 104.

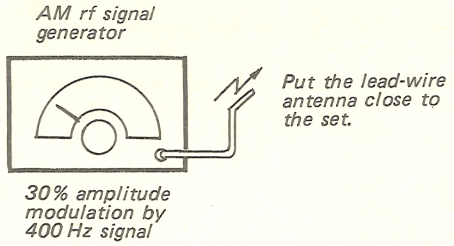
Setting:

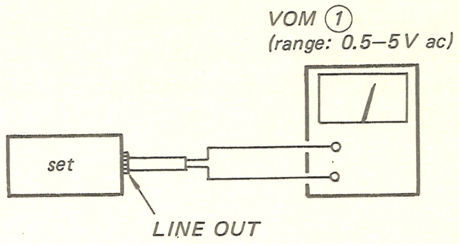
RADIO switch: ON
BAND switch: AM
Tuning knob: fully clockwise and detuned

Procedure:


radio board
check point
0.52 ± 0.05 V
R118
33 kΩ ~ 47 kΩ
R113
2.2 kΩ
R122
680 Ω
check point
0.46 V ± 0.04 V
R120
51 kΩ ~ 75 kΩ

1. Select resistance value of R120 for 0.46 ± 0.04 V across R122.
2. Select resistance value of R118 for 0.52 ± 0.05 V across R113.


AM rf signal generator
Put the lead-wire antenna close to the set.
30% amplitude modulation by 400 Hz signal

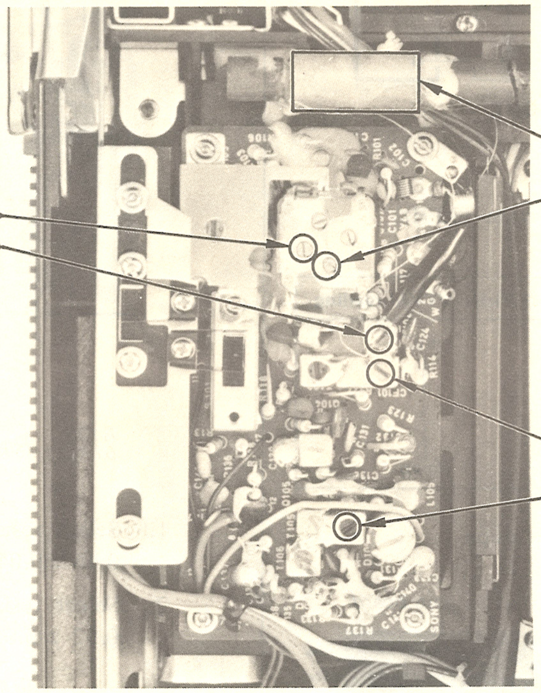

VOM ①
(range: 0.5–5 V ac)
set
LINE OUT

Note: Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

AM FREQUENCY COVERAGE ADJUSTMENT

Adjust for a maximum reading on VOM ①.

1,680 kHz	C108-14
520 kHz	T102



AM TRACKING ADJUSTMENT

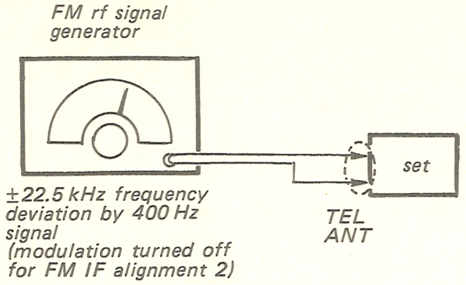
Adjust for a maximum reading on VOM ①.

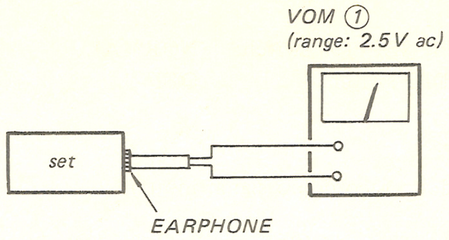
ANT2	620 kHz
C108-13	1,400 kHz

AM IF ALIGNMENT

Adjust for a maximum reading on VOM ①.

CF101	455 kHz
T107	


FM rf signal generator
±22.5 kHz frequency deviation by 400 Hz signal (modulation turned off for FM IF alignment 2)
set
TEL ANT


VOM ①
(range: 2.5 V ac)
set
EARPHONE

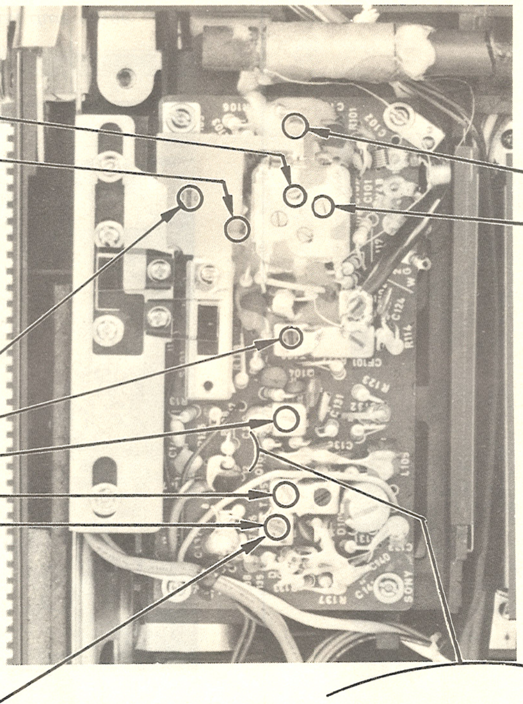
Note: Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

FM FREQUENCY COVERAGE ADJUSTMENT

Adjust for a maximum reading on VOM ①.

109.5 MHz (108.5 MHz)	C108-12
86 MHz (87.1 MHz)	L104

(   ): in West Germany



FM TRACKING ADJUSTMENT

Adjust for a maximum reading on VOM ①.

L102	86 MHz (87.1 MHz)
C108-11	109.5 MHz (108.5 MHz)

(   ): in West Germany

FM IF ALIGNMENT 1
(10.7 MHz with modulation)

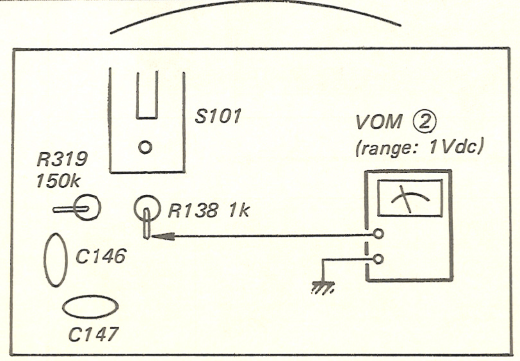
Adjust for a maximum reading on VOM ①.

T101
T103
T104
T105
T106

FM IF ALIGNMENT 2
(10.7 MHz with no modulation)

Adjust for a 0 V reading on VOM ②.

T106

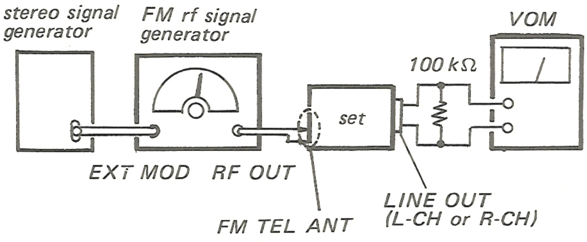

S101
R319 150k
R138 1k
C146
C147
VOM ②
(range: 1 Vdc)

Stereo Separation Adjustment

Setting:

FUNCTION switch: FM
MODE switch: STEREO

Procedure:

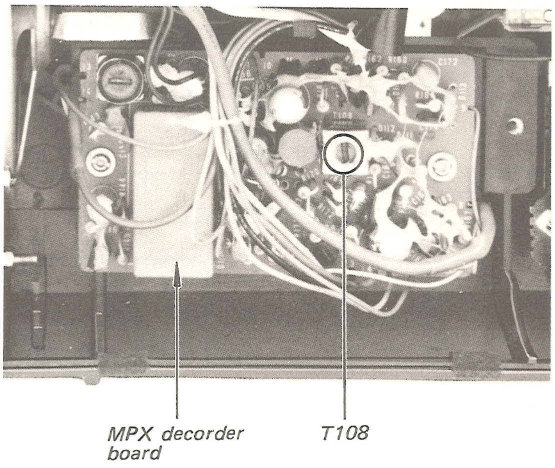

stereo signal generator
FM rf signal generator
VOM
100 kΩ
set
EXT MOD
RF OUT
FM TEL ANT
LINE OUT (L-CH or R-CH)

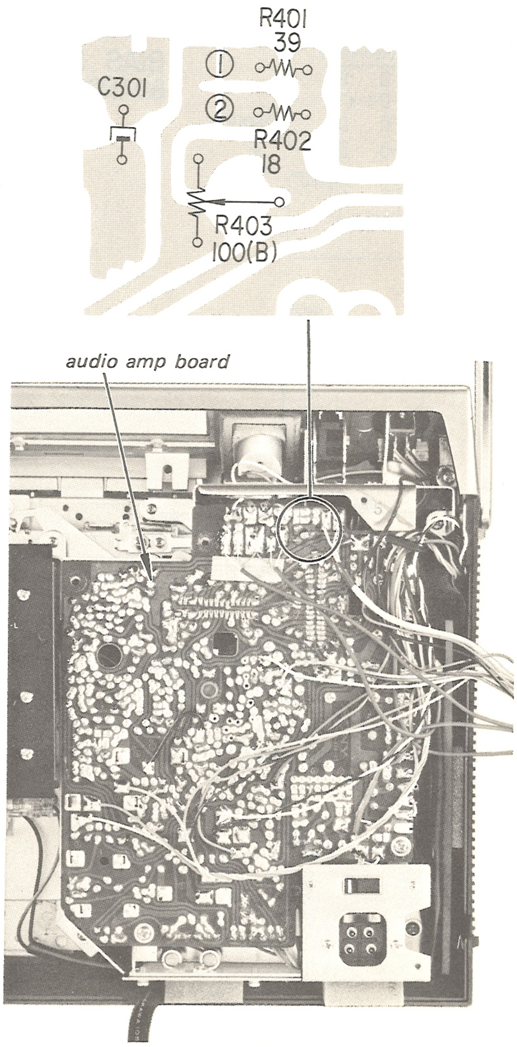
Carrier frequency: 98 MHz

	Main channel	Sub channel	Pilot signal
Frequency deviation	10.125 kHz (13.5%)	10.125 kHz (13.5%)	7.5 kHz (10%)
Modulation frequency	1 kHz	1 kHz	19 kHz

1. Adjust T108 for a maximum reading on VOM at both channels.
2. Modulate L-ch (R-ch) only and adjust the pattern connection for a minimum reading on VOM at R-ch (L-ch).
3. Adjust R403 for a minimum reading on VOM at R-ch (L-ch).
4. Repeat above several times.

Adjustment Location:

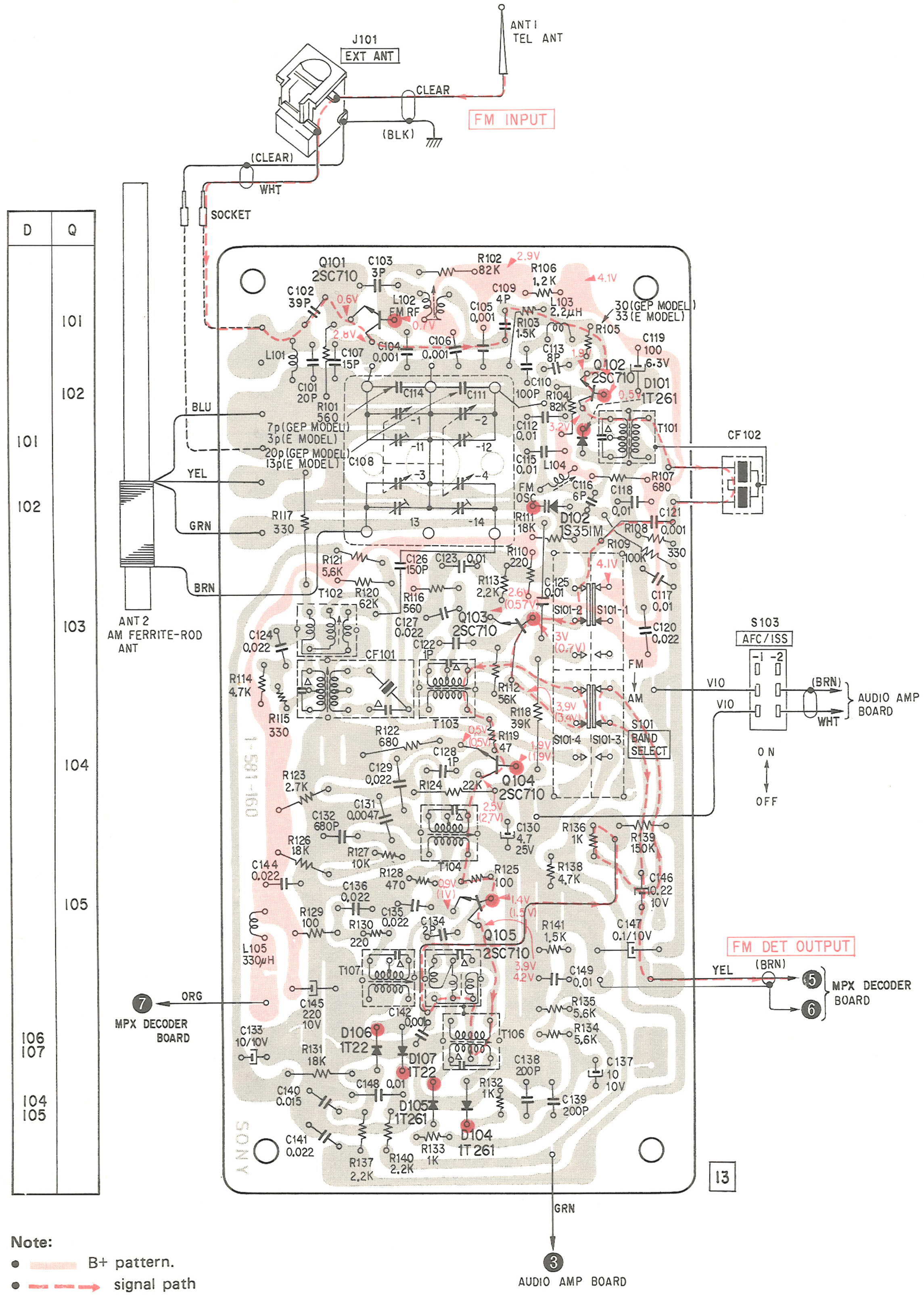

MPX decorder board
T108


R401
39
①
②
C301
R402
18
R403
100(B)
audio amp board

SECTION 4
DIAGRAMS

4-1. MOUNTING DIAGRAM – Radio Board –

– *Conductor Side* –


J101
EXT ANT
ANT1
TEL ANT
CLEAR
FM INPUT
(BLK)
(CLEAR)
WHT
SOCKET
D
Q
101
102
103
104
105
106
107
104
105
BLU
YEL
GRN
BRN
ANT2
AM FERRITE-ROD ANT
Q101
2SC710
C103
3P
R102
82K
2.9V
R106
1.2K
4.1V
C102
39P
0.6V
L102
FM RF
0.7V
C109
4P
L103
2.2μH
30(GEP MODEL)
33(E MODEL)
C105
0.001
R103
1.5K
R105
C119
100
6.3V
L101
2.8V
C104
0.001
C106
0.001
C107
15P
C113
8P
1.9V
Q102
2SC710
D101
1T261
C101
20P
C110
100P
R104
82K
0.5V
R101
560
C114
C111
C112
0.01
3.2V
T101
CF102
7p(GEP MODEL)
3p(E MODEL)
20p(GEP MODEL)
13p(E MODEL)
C108
C115
0.01
L104
FM OSC
C116
6P
C118
0.01
R107
680
R117
330
R111
18K
D102
1S351M
C121
0.001
R108
100K
R109
330
R121
5.6K
C126
150P
C123
0.01
R110
220
4.1V
T102
R120
62K
R113
2.2K
2.6V
(0.57V)
C125
0.01
C117
0.01
R116
560
C127
0.022
Q103
2SC710
S101-2
S101-1
C120
0.022
C124
0.022
C122
1P
CF101
3V
(0.7V)
S103
AFC/ISS
-1
-2
R114
4.7K
R112
56K
FM
AM
V10
V10
(BRN)
WHT
AUDIO AMP BOARD
R115
330
R118
39K
3.9V
(3.4V)
S101
BAND SELECT
T103
0.5V
(0.5V)
R119
47
S101-4
S101-3
R122
680
C128
1P
1.9V
(1.9V)
ON
OFF
R123
2.7K
C129
0.022
R124
22K
Q104
2SC710
C131
0.0047
2.5V
(2.7V)
C132
680P
C130
4.7
25V
R136
1K
R139
150K
R126
18K
R127
10K
T104
R125
100
R138
4.7K
C146
0.22
10V
C144
0.022
R128
470
0.9V
(1V)
C136
0.022
1.4V
(1.5V)
R129
100
C135
0.022
R130
220
C134
2P
Q105
2SC710
R141
1.5K
C147
0.1/10V
FM DET OUTPUT
L105
330μH
T107
3.9V
4.2V
C149
0.01
YEL
(BRN)
5
MPX DECODER BOARD
6
7
ORG
MPX DECODER BOARD
C145
220
10V
C142
0.001
R135
5.6K
R134
5.6K
C133
10/10V
D106
1T22
T106
R131
18K
D107
1T22
C138
200P
C137
10
10V
C140
0.015
C148
0.01
R132
1K
C139
200P
D105
1T261
C141
0.022
R133
1K
D104
1T261
R137
2.2K
R140
2.2K
SONY
1-591-160
13
GRN
3
AUDIO AMP BOARD

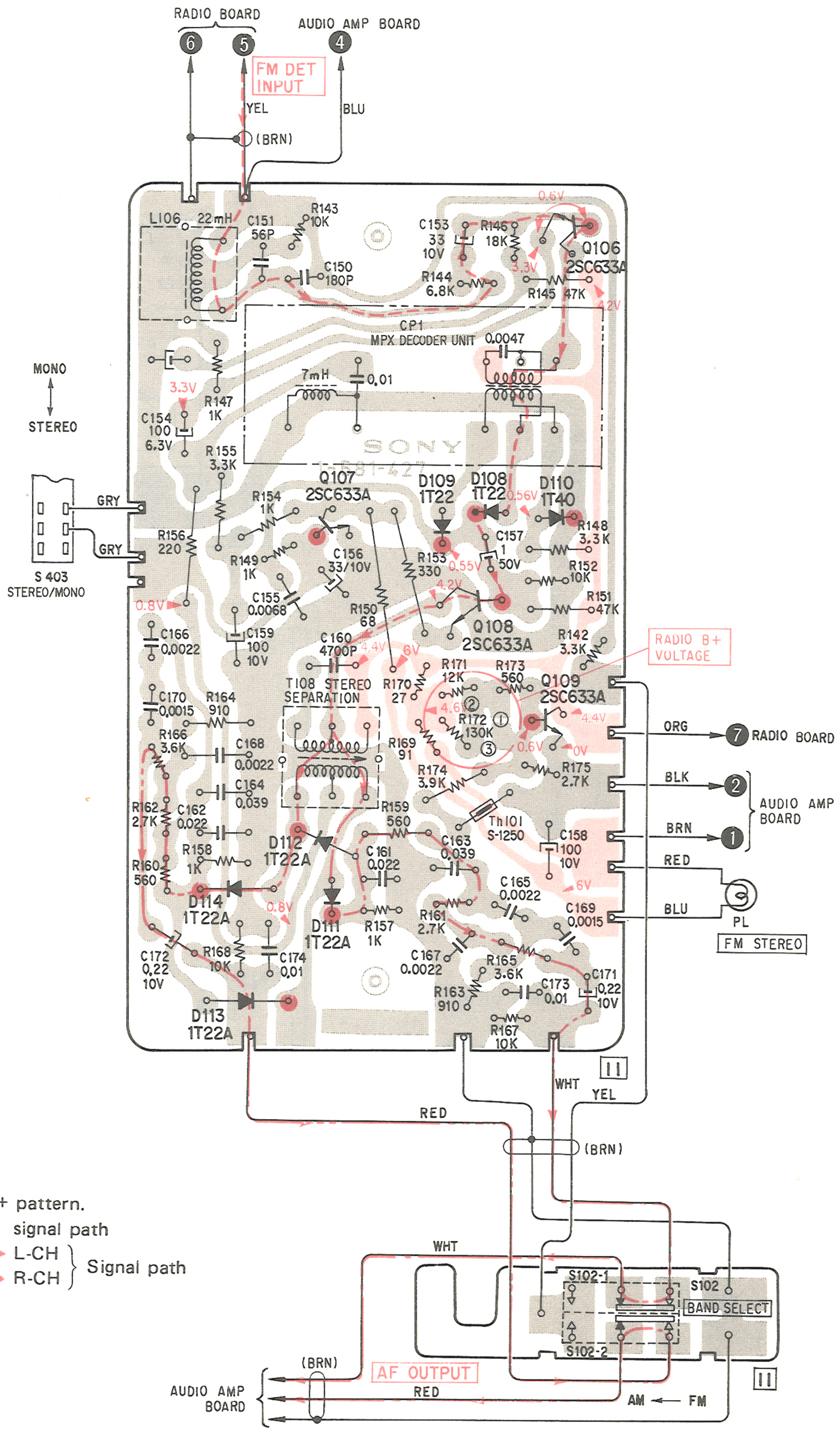
Note:

- ▭ B+ pattern.
- ➝ signal path

4-2. MOUNTING DIAGRAM – MPX Decoder Board –

– Conductor Side –

D	Q
	106
108 110 109	107
	108
	109
112	
114 111	
113	

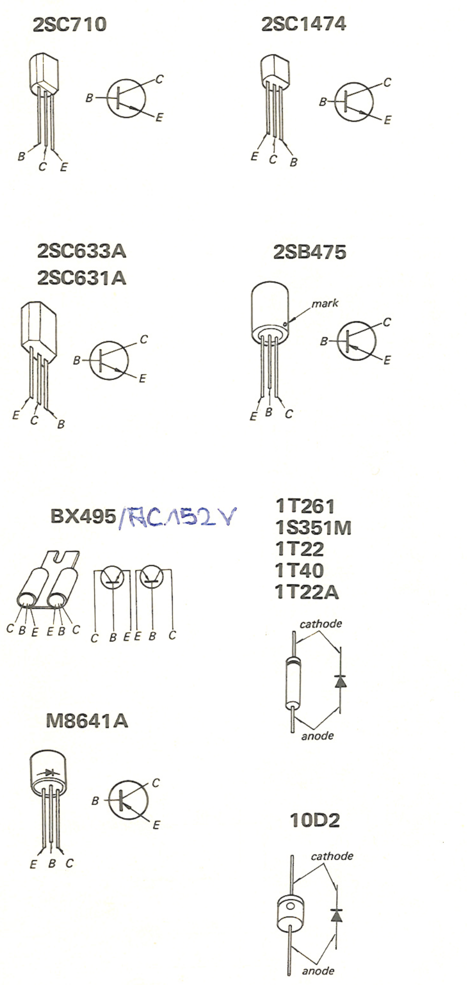

RADIO BOARD
6
5
AUDIO AMP BOARD
4
FM DET INPUT
YEL
BLU
(BRN)
L106 22mH
C151 56P
R143 10K
C150 180P
C153 33 10V
R146 18K
R144 6.8K
R145 47K
Q106 2SC633A
0.6V
3.3V
4.2V
CP1 MPX DECODER UNIT
0.0047
7mH
0.01
SONY
MONO
STEREO
3.3V
R147 1K
C154 100 6.3V
R155 3.3K
GRY
GRY
S 403 STEREO/MONO
Q107 2SC633A
R154 1K
R156 220
R149 1K
C156 33/10V
D109 1T22
D108 1T22
0.56V
D110 1T40
R148 3.3K
C157 1 50V
R153 330
0.55V
R152 10K
4.2V
C155 0.0068
R150 68
Q108 2SC633A
R151 47K
0.8V
C166 0.0022
C159 100 10V
C160 4700P
4.4V
6V
R142 3.3K
RADIO B+ VOLTAGE
C170 0.0015
R164 910
T108 STEREO SEPARATION
R170 27
R171 12K
R173 560
Q109 2SC633A
4.6V
R172 130K
4.4V
R166 3.6K
C168 0.0022
R169 91
0.6V
0V
ORG
7 RADIO BOARD
C164 0.039
R174 3.9K
R175 2.7K
BLK
2
AUDIO AMP BOARD
R162 2.7K
C162 0.022
R159 560
Th101 S-1250
C158 100 10V
BRN
1
D112 1T22A
C163 0.039
R158 1K
C161 0.022
RED
R160 560
D114 1T22A
0.8V
C165 0.0022
6V
BLU
PL
FM STEREO
D111 1T22A
R157 1K
R161 2.7K
C169 0.0015
C172 0.22 10V
R168 10K
C174 0.01
C167 0.0022
R165 3.6K
C171 0.22 10V
R163 910
C173 0.01
D113 1T22A
R167 10K
II
WHT
YEL
RED
(BRN)
WHT
S102-1
S102 BAND SELECT
S102-2
(BRN)
AF OUTPUT
RED
AUDIO AMP BOARD
AM ← FM
II

Note:

- ▨ B+ pattern.
- ⇢ signal path
- ⇢ L-CH } Signal path
- ⇢ R-CH

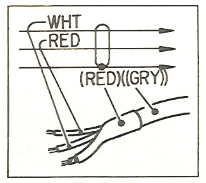
4-3. MOUNTING DIAGRAM

– Conductor Side –

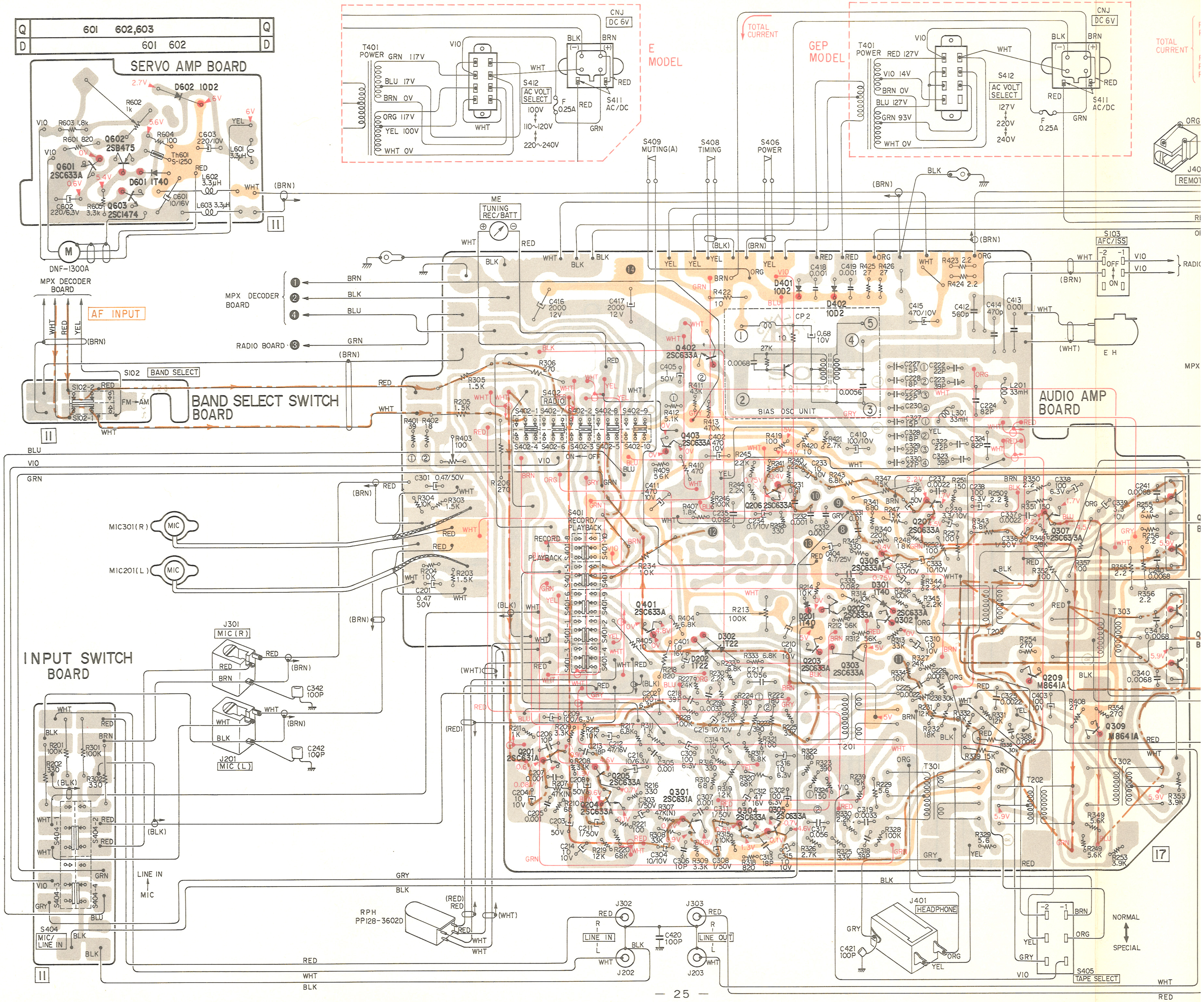

2SC710
2SC1474
2SC633A
2SC631A
2SB475
mark
BX495/RC152V
1T261
1S351M
1T22
1T40
1T22A
cathode
anode
M8641A
10D2
cathode
anode
B
C
E

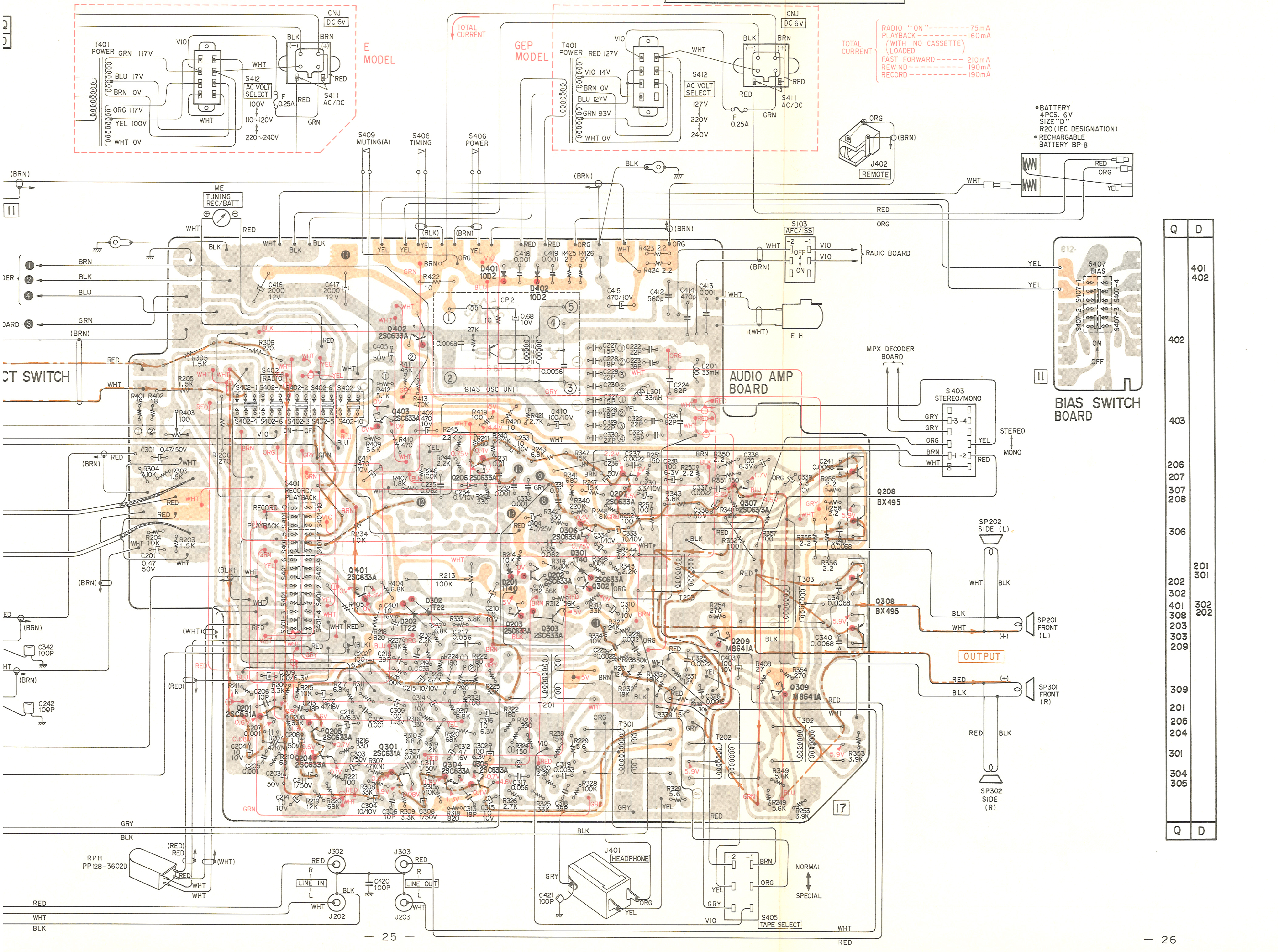
Note:

- ●— indicates lead wire connection on the conductor side.
- ○— indicates lead wire connection through the component side.
- ▬ B+ pattern.
- Color code of sleeving over the end of the jacket.


WHT
RED
(RED)(GRY)

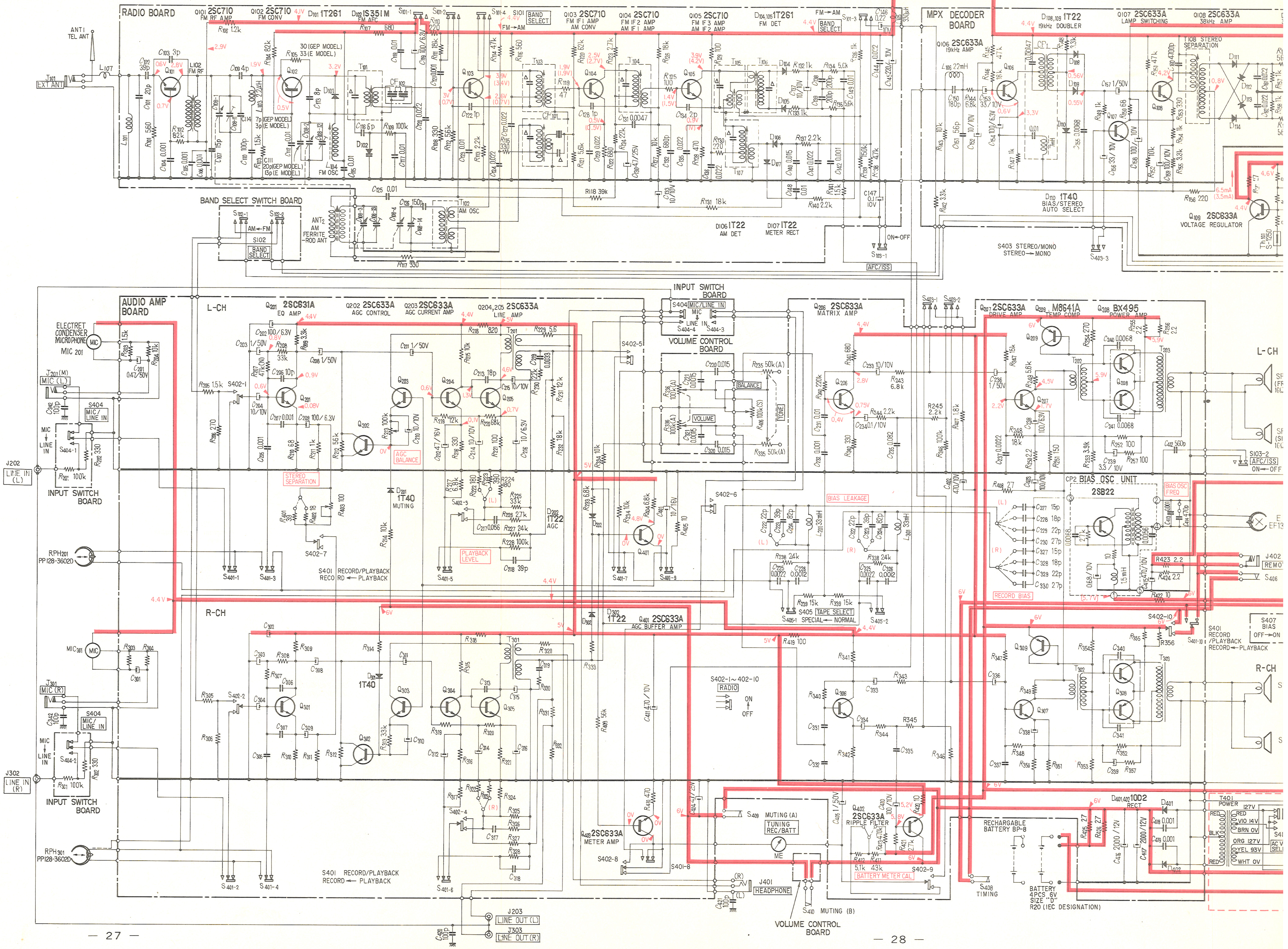
- ‑‑‑▸ L-CH } Signal path
- ‑‑‑▸ R-CH

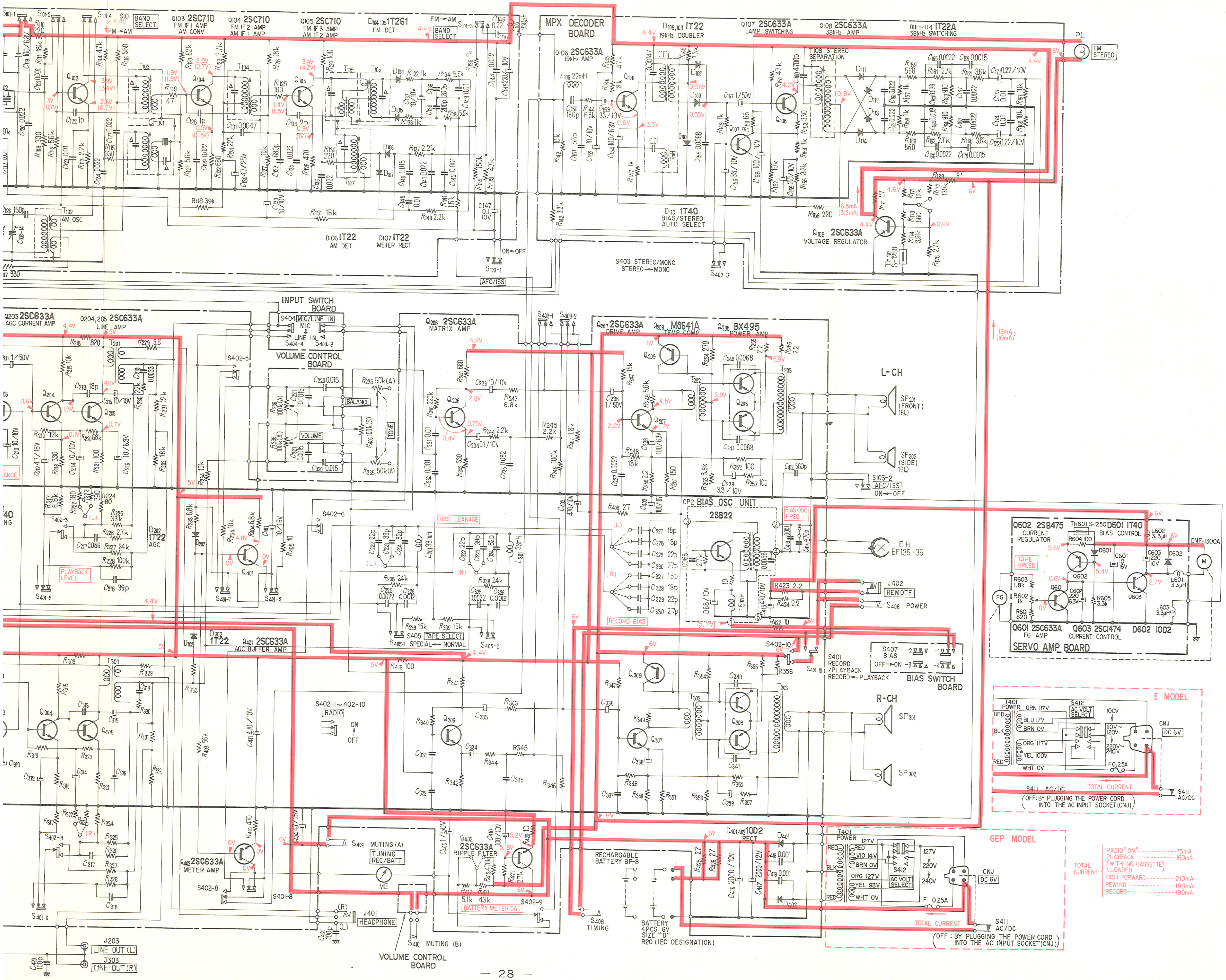

SERVO AMP BOARD
Q 601 602,603 Q
D 601 602 D
DNF-1300A
MPX DECODER BOARD
AF INPUT
BAND SELECT SWITCH BOARD
S102 BAND SELECT
FM↔AM
MPX DECODER BOARD
RADIO BOARD
E MODEL
GEP MODEL
T401 POWER
S412 AC VOLT SELECT
S411 AC/DC
CNJ DC 6V
TOTAL CURRENT
S409 MUTING(A)
S408 TIMING
S406 POWER
ME TUNING REC/BATT
S103 AFC/ISS
BIAS OSC UNIT
AUDIO AMP BOARD
S401 RECORD/PLAYBACK
RECORD
PLAYBACK
RADIO
MIC301(R)
MIC201(L)
MIC
INPUT SWITCH BOARD
J301 MIC (R)
J201 MIC (L)
S404 MIC/LINE IN
LINE IN
MIC
RPH PP128-3602D
J302 LINE IN
J202
J303 LINE OUT
J203
J401 HEADPHONE
S405 TAPE SELECT
NORMAL
SPECIAL
17
II


E MODEL
GEP MODEL
T401 POWER
CNJ DC 6V
S412 AC VOLT SELECT
S411 AC/DC
F 0.25A
110~120V
220~240V
TOTAL CURRENT
RADIO "ON" 75mA
PLAYBACK (WITH NO CASSETTE LOADED) 160mA
FAST FORWARD 210mA
REWIND 190mA
RECORD 190mA
S409 MUTING(A)
S408 TIMING
S406 POWER
ME TUNING REC/BATT
J402 REMOTE
BATTERY 4PCS. 6V SIZE "D" R20 (IEC DESIGNATION)
RECHARGABLE BATTERY BP-8
S103 AFC/ISS
RADIO BOARD
CT SWITCH
S402 RADIO
BIAS OSC UNIT
AUDIO AMP BOARD
MPX DECODER BOARD
S403 STEREO/MONO
STEREO
MONO
S407 BIAS
BIAS SWITCH BOARD
ON
OFF
S401 RECORD/PLAYBACK
RECORD
PLAYBACK
Q208 BX495
Q308 BX495
Q209 M8641A
Q309 M8641A
OUTPUT
SP202 SIDE (L)
SP201 FRONT (L)
SP301 FRONT (R)
SP302 SIDE (R)
RPH PP128-3602D
J302 LINE IN
J303 LINE OUT
J202
J203
J401 HEADPHONE
S405 TAPE SELECT
NORMAL
SPECIAL
Q
D
401
402
402
403
206
207
307
208
306
201
301
202
302
401
308
203
303
209
302
202
309
201
205
204
301
304
305

CF-550B CF-550B

4-4. SCHEMATIC DIAGRAM


RADIO BOARD
Q101 2SC710 FM RF AMP
Q102 2SC710 FM CONV
D101 1T261
D102 1S351M FM AFC
S101 BAND SELECT
Q103 2SC710 FM IF1 AMP AM CONV
Q104 2SC710 FM IF2 AMP AM IF1 AMP
Q105 2SC710 FM IF3 AMP AM IF2 AMP
D104,105 1T261 FM DET
BAND SELECT
MPX DECODER BOARD
Q106 2SC633A 19kHz AMP
D108,109 1T22 19kHz DOUBLER
Q107 2SC633A LAMP SWITCHING
Q108 2SC633A 38kHz AMP
T108 STEREO SEPARATION
D110 1T40 BIAS/STEREO AUTO SELECT
Q109 2SC633A VOLTAGE REGULATOR
S403 STEREO/MONO STEREO → MONO
ANTI TEL ANT
J101 EXT ANT
BAND SELECT SWITCH BOARD
ANT2 AM FERRITE-ROD ANT
T102 AM OSC
D106 1T22 AM DET
D107 1T22 METER RECT
ON → OFF
AFC/ISS
AUDIO AMP BOARD
L-CH
Q201 2SC631A EQ AMP
Q202 2SC633A AGC CONTROL
Q203 2SC633A AGC CURRENT AMP
Q204,205 2SC633A LINE AMP
INPUT SWITCH BOARD
VOLUME CONTROL BOARD
BALANCE
VOLUME
TONE
Q206 2SC633A MATRIX AMP
Q207 2SC633A DRIVE AMP
Q209 M8641A TEMP COMP
Q208 BX495 POWER AMP
ELECTRET CONDENSER MICROPHONE
MIC 201
J201(M) MIC (L)
MIC/LINE IN
J202 LINE IN (L)
INPUT SWITCH BOARD
RPH201 PP128-36020
AGC BALANCE
STEREO SEPARATION
D201 1T40 MUTING
PLAYBACK LEVEL
D202 1T22 AGC
S401 RECORD/PLAYBACK RECORD ← PLAYBACK
BIAS LEAKAGE
CP2 BIAS OSC UNIT 2SB22
BIAS OSC FREQ
RECORD BIAS
S405 TAPE SELECT SPECIAL ← NORMAL
S103-2 AFC/ISS ON → OFF
J402 REMOTE
S406
S407 BIAS OFF → ON
S401 RECORD/PLAYBACK RECORD ← PLAYBACK
R-CH
MIC301
J301 MIC (R)
J302 LINE IN (R)
RPH301 PP128-36020
D301 1T40
D302 1T22
Q401 2SC633A AGC BUFFER AMP
S402-1 ~ 402-10 RADIO ON OFF
Q403 2SC633A METER AMP
S409 MUTING (A)
TUNING REC/BATT
ME
Q402 2SC633A RIPPLE FILTER
BATTERY METER CAL
J401 HEADPHONE
S410 MUTING (B)
VOLUME CONTROL BOARD
J203 LINE OUT (L)
J303 LINE OUT (R)
RECHARGEABLE BATTERY BP-8
S408 TIMING
BATTERY 4PCS. 6V SIZE "D" R20 (IEC DESIGNATION)
D401,402 10D2 RECT
T401 POWER
L-CH
R-CH

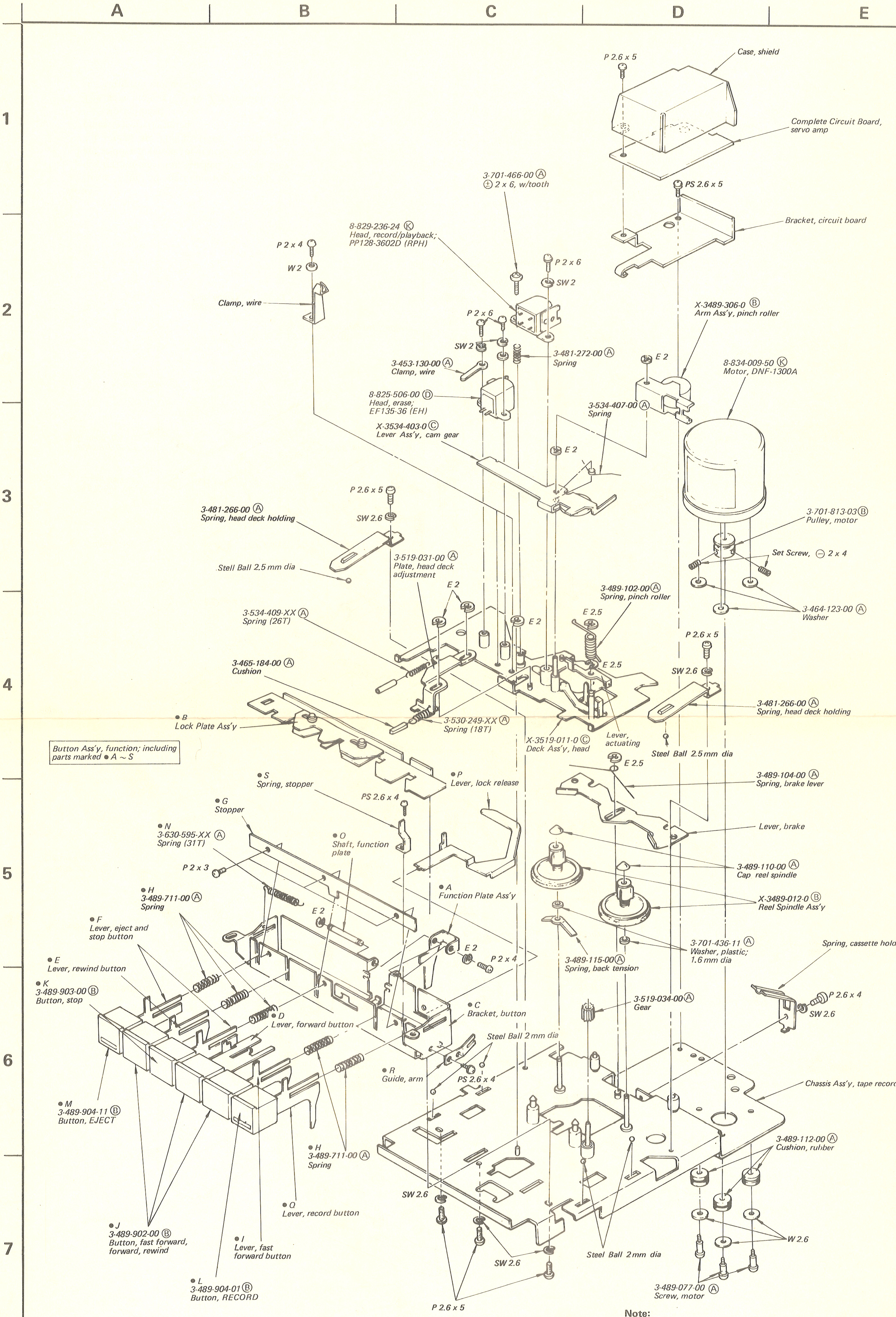

Q103 2SC710 FM IF 1 AMP AM CONV
Q104 2SC710 FM IF 2 AMP AM IF 1 AMP
Q105 2SC710 FM IF 3 AMP AM IF 2 AMP
D104,105 1T261 FM DET
S101 BAND SELECT
FM→AM
MPX DECODER BOARD
Q106 2SC633A 19kHz AMP
D108,109 1T22 19kHz DOUBLER
Q107 2SC633A LAMP SWITCHING
Q108 2SC633A 38kHz AMP
D111~114 1T22A 38kHz SWITCHING
T108 STEREO SEPARATION
PL
FM STEREO
T102 AM OSC
D106 1T22 AM DET
D107 1T22 METER RECT
D110 1T40 BIAS/STEREO AUTO SELECT
Q109 2SC633A VOLTAGE REGULATOR
S103-1 AFC/ISS
ON→OFF
S403 STEREO/MONO STEREO→MONO
13mA (10mA)
Q203 2SC633A AGC CURRENT AMP
Q204,205 2SC633A LINE AMP
INPUT SWITCH BOARD
S404 MIC/LINE IN
MIC LINE IN
VOLUME CONTROL BOARD
BALANCE
VOLUME
TONE
Q206 2SC633A MATRIX AMP
Q207 2SC633A DRIVE AMP
Q209 M8641A TEMP COMP
Q208 BX495 POWER AMP
L-CH
SP201 (FRONT) 16Ω
SP202 (SIDE) 16Ω
S103-2 AFC/ISS ON→OFF
PLAYBACK LEVEL
D202 1T22 AGC
BIAS LEAKAGE
CP2 BIAS OSC UNIT
2SB22
BIAS OSC FREQ
RECORD BIAS
EH EF135-36
J402 REMOTE
S406 POWER
S405 TAPE SELECT
S405-1 SPECIAL→NORMAL
S401 RECORD /PLAYBACK RECORD→PLAYBACK
S407 BIAS OFF→ON
BIAS SWITCH BOARD
D302 1T22
Q401 2SC633A AGC BUFFER AMP
S402-1~402-10 RADIO ON OFF
R-CH
SP301
SP302
Q602 2SB475 CURRENT REGULATOR
Th601 S-1250 D601 1T40 BIAS CONTROL
TAPE SPEED
DNF-1300A
M
FG
Q601 2SC633A FG AMP
Q603 2SC1474 CURRENT CONTROL
D602 10D2
SERVO AMP BOARD
E MODEL
T401 POWER
S412 AC VOLT SELECT
CNJ DC 6V
F 0.25A
TOTAL CURRENT
S411 AC/DC
S411 AC/DC (OFF: BY PLUGGING THE POWER CORD INTO THE AC INPUT SOCKET (CNJ))
Q402 METER AMP 2SC633A
S409 MUTING (A)
TUNING REC/BATT
ME
Q402 2SC633A RIPPLE FILTER
BATTERY METER CAL
D401,402 10D2 RECT
RECHARGABLE BATTERY BP-8
S408 TIMING
BATTERY 4PCS 6V SIZE "D" R20 (IEC DESIGNATION)
GEP MODEL
CNJ DC 6V
F 0.25A
TOTAL CURRENT
S411 AC/DC
(OFF: BY PLUGGING THE POWER CORD INTO THE AC INPUT SOCKET (CNJ))
TOTAL CURRENT
RADIO "ON" ---------- 75mA
PLAYBACK ---------- 160mA
(WITH NO CASSETTE LOADED)
FAST FORWARD ---------- 210mA
REWIND ---------- 190mA
RECORD ---------- 190mA
J401 HEADPHONE
S410 MUTING (B)
VOLUME CONTROL BOARD
J203 LINE OUT (L)
J303 LINE OUT (R)
S401-5
S401-6
S401-7
S401-8
S402-8
S402-9

Note:

- All capacitors are in μF unless otherwise noted.
  50 or less working voltages are not indicated except for electrolytic type. p = μμF
- All resistors are in Ω, ¼W, unless otherwise noted.
  k = 1,000 M = 1,000 k
- △ indicates internal components.
- ⏚ indicates chassis ground.
- ▬ indicates B+ circuit.
- Voltages are DC with respect to ground unless otherwise noted. Readings are taken under no-signal conditions with a VOM (20 kΩ/V). Readings in [ ] are in record mode.
  ( ): AM
  no mark: common
- Voltage variations may be noted due to normal production tolerances.
- Voltage between base and emitter are measured with 2.5V range.
- ▭ indicates designation on the panel.
- ▭ indicates the adjustment for repair.
- Switch Mode:

Ref. No.	Switch	Position
S101 S102	BAND SELECT	FM
S103	AFC/ISS	OFF
S401	RECORD/PLAYBACK	PLAYBACK
S402	RADIO	OFF
S403	STEREO/MONO	STEREO
S404	MIC/LINE IN	MIC
S405	TAPE SELECT	NORMAL
S406	POWER	OFF
S407	BIAS	OFF
S408	TIMING	OFF
S409	MUTING (A)	OFF
S410	MUTING (B)	OFF
S411	AC/DC	DC
S412	AC VOLT SELECT	100V (E model) 127V (GEP model)

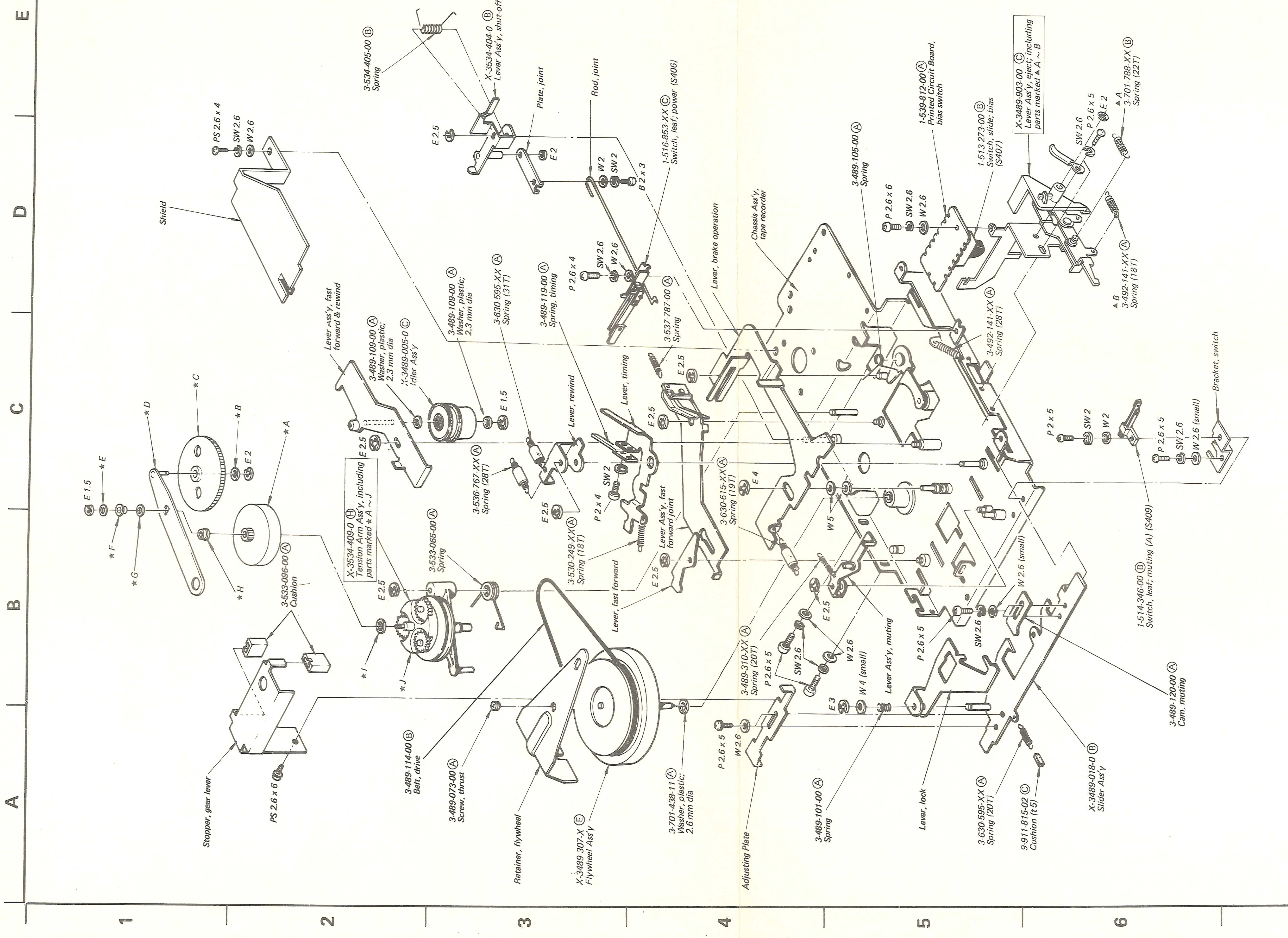
5-2. CHASSIS — Top View —


A
B
C
D
E
1
2
3
4
5
6
7
P 2.6 x 5
Case, shield
Complete Circuit Board, servo amp
PS 2.6 x 5
Bracket, circuit board
3-701-466-00 Ⓐ
⊕ 2 x 6, w/tooth
8-829-236-24 Ⓚ
Head, record/playback;
PP128-3602D (RPH)
P 2 x 4
W 2
P 2 x 6
SW 2
Clamp, wire
X-3489-306-0 Ⓑ
Arm Ass'y, pinch roller
P 2 x 6
SW 2
3-481-272-00 Ⓐ
Spring
E 2
8-834-009-50 Ⓚ
Motor, DNF-1300A
3-453-130-00 Ⓐ
Clamp, wire
8-825-506-00 Ⓓ
Head, erase;
EF135-36 (EH)
3-534-407-00 Ⓐ
Spring
X-3534-403-0 Ⓒ
Lever Ass'y, cam gear
E 2
P 2.6 x 5
SW 2.6
3-481-266-00 Ⓐ
Spring, head deck holding
3-701-813-03 Ⓑ
Pulley, motor
Set Screw, ⊖ 2 x 4
3-519-031-00 Ⓐ
Plate, head deck adjustment
Stell Ball 2.5 mm dia
E 2
3-489-102-00 Ⓐ
Spring, pinch roller
3-464-123-00 Ⓐ
Washer
3-534-409-XX Ⓐ
Spring (26T)
E 2
E 2.5
P 2.6 x 5
E 2.5
SW 2.6
3-465-184-00 Ⓐ
Cushion
3-481-266-00 Ⓐ
Spring, head deck holding
● B
Lock Plate Ass'y
3-530-249-XX Ⓐ
Spring (18T)
X-3519-011-0 Ⓒ
Deck Ass'y, head
Lever, actuating
Steel Ball 2.5 mm dia
Button Ass'y, function; including parts marked ● A ~ S
E 2.5
● S
Spring, stopper
● P
Lever, lock release
3-489-104-00 Ⓐ
Spring, brake lever
PS 2.6 x 4
● G
Stopper
Lever, brake
● N
3-630-595-XX Ⓐ
Spring (31T)
● O
Shaft, function plate
P 2 x 3
3-489-110-00 Ⓐ
Cap reel spindle
● A
Function Plate Ass'y
● H
3-489-711-00 Ⓐ
Spring
X-3489-012-0 Ⓑ
Reel Spindle Ass'y
E 2
● F
Lever, eject and stop button
E 2
P 2 x 4
3-701-436-11 Ⓐ
Washer, plastic;
1.6 mm dia
3-489-115-00 Ⓐ
Spring, back tension
● E
Lever, rewind button
Spring, cassette holding
● K
3-489-903-00 Ⓑ
Button, stop
3-519-034-00 Ⓐ
Gear
P 2.6 x 4
SW 2.6
● D
Lever, forward button
● C
Bracket, button
Steel Ball 2 mm dia
● R
Guide, arm
PS 2.6 x 4
Chassis Ass'y, tape recorder
● M
3-489-904-11 Ⓑ
Button, EJECT
● H
3-489-711-00 Ⓐ
Spring
3-489-112-00 Ⓐ
Cushion, rubber
SW 2.6
● Q
Lever, record button
● J
3-489-902-00 Ⓑ
Button, fast forward, forward, rewind
● I
Lever, fast forward button
W 2.6
SW 2.6
Steel Ball 2 mm dia
● L
3-489-904-01 Ⓑ
Button, RECORD
3-489-077-00 Ⓐ
Screw, motor
P 2.6 x 5

Note:

- ○ Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- ○ All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- ○ The circled letters (Ⓐ to Ⓩ) are applicable for European model only.

5-3. CHASSIS – Bottom View –


A
B
C
D
E
1
2
3
4
5
6
7
Shield
PS 2.6 x 4
SW 2.6
W 2.6
3-534-405-00 Ⓑ Spring
X-3534-404-0 Ⓑ Lever Ass'y, shut-off
E 2.5
Plate, joint
E 2
Rod, joint
W 2
SW 2
B 2 x 3
1-516-853-XX Ⓒ Switch, leaf; power (S406)
Lever, brake operation
Chassis Ass'y, tape recorder
3-489-105-00 Ⓐ Spring
P 2.6 x 6
SW 2.6
W 2.6
1-539-812-00 Ⓐ Printed Circuit Board, bias switch
1-513-273-00 Ⓑ Switch, slide; bias (S407)
X-3489-903-00 Ⓒ Lever Ass'y, eject; including parts marked ▲A ~ B
SW 2.6
P 2.6 x 5
E 2
▲A 3-701-788-XX Ⓑ Spring (22T)
3-492-141-XX Ⓐ Spring (18T)
▲B
3-492-141-XX Ⓐ Spring (28T)
Bracket, switch
P 2 x 5
SW 2
W 2
P 2.6 x 5
SW 2.6
W 2.6 (small)
1-514-346-00 Ⓑ Switch, leaf; muting (A) (S409)
3-489-120-00 Ⓐ Cam, muting
X-3489-018-0 Ⓑ Slider Ass'y
9-911-815-02 Ⓒ Cushion (t5)
3-630-595-XX Ⓐ Spring (20T)
Lever, lock
3-489-101-00 Ⓐ Spring
Lever Ass'y, muting
W 4 (small)
E 3
W 2.6
SW 2.6
P 2.6 x 5
E 2.5
W 2.6 (small)
SW 2.6
P 2.6 x 5
3-489-310-XX Ⓐ Spring (20T)
P 2.6 x 5
W 2.6
Adjusting Plate
3-701-438-11 Ⓐ Washer, plastic; 2.6 mm dia
X-3489-307-X Ⓔ Flywheel Ass'y
Retainer, flywheel
3-489-073-00 Ⓐ Screw, thrust
3-489-114-00 Ⓑ Belt, drive
PS 2.6 x 6
Stopper, gear lever
3-533-096-00 Ⓐ Cushion
*I
*J
*H
*G
*F
E 1.5
*E
*D
*C
*B
E 2
*A
X-3534-409-0 Ⓗ Tension Arm Ass'y, including parts marked *A ~ J
E 2.5
3-533-065-00 Ⓐ Spring
Lever Ass'y, fast forward & rewind
3-489-109-00 Ⓐ Washer, plastic; 2.3 mm dia
X-3489-005-0 Ⓒ Idler Ass'y
E 2.5
3-489-109-00 Ⓐ Washer, plastic; 2.3 mm dia
E 1.5
3-630-595-XX Ⓐ Spring (31T)
3-536-767-XX Ⓐ Spring (28T)
Lever, rewind
E 2.5
3-489-119-00 Ⓐ Spring, timing
Lever, timing
P 2.6 x 4
SW 2.6
W 2.6
3-537-787-00 Ⓐ Spring
E 2.5
E 2.5
SW 2
P 2 x 4
3-530-249-XX Ⓐ Spring (18T)
Lever Ass'y, fast forward joint
Lever, fast forward
E 2.5
3-630-615-XX Ⓐ Spring (19T)
E 4
W 5
W 2.6 (small)

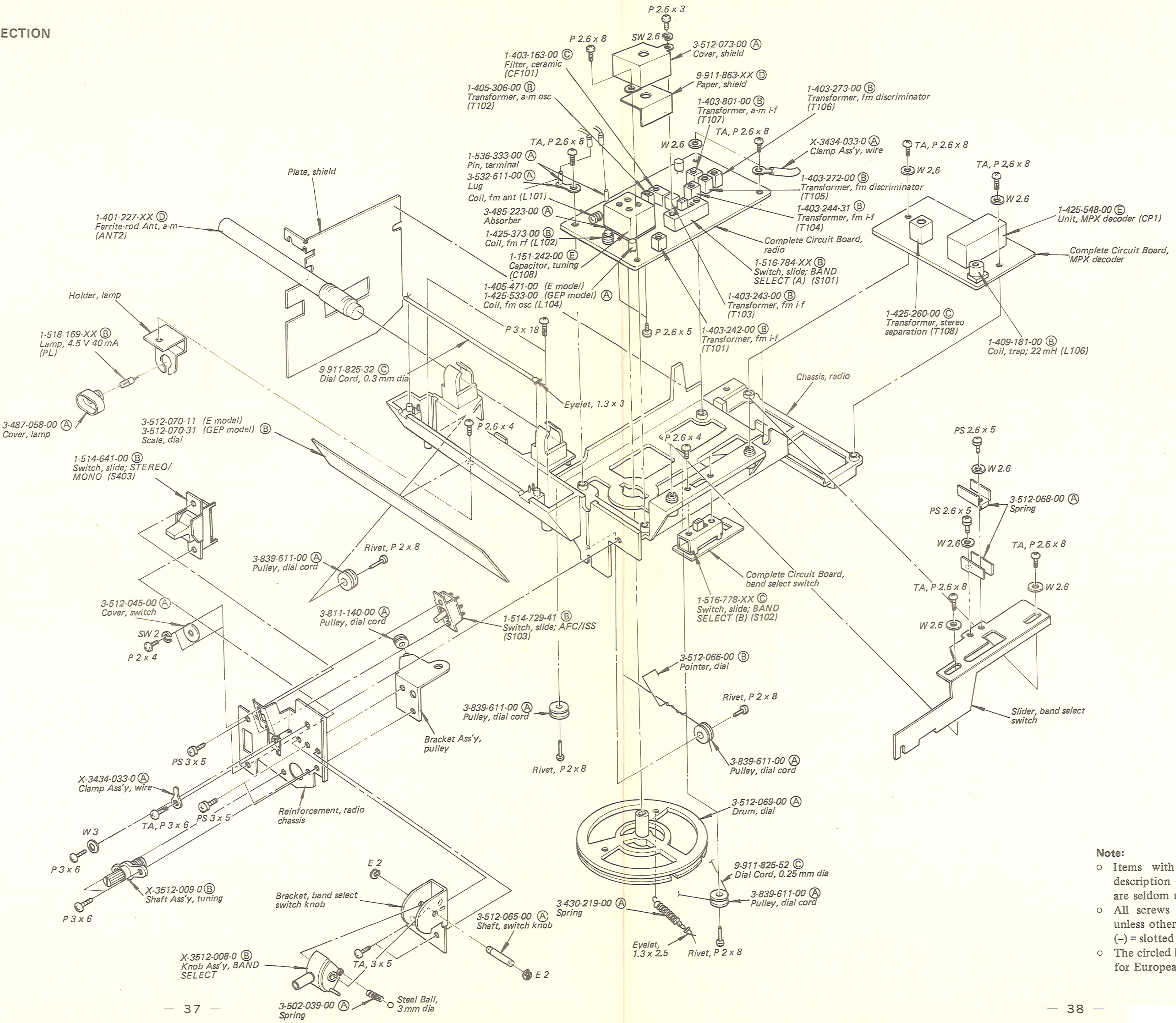
Note:

- ○ Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- ○ All screws are Phillips (cross recess) type unless otherwise noted. (-) = slotted head
- ○ The circled letters Ⓐ to Ⓩ are applicable for European model only.

A B C D E F G

1 2 3 4 5

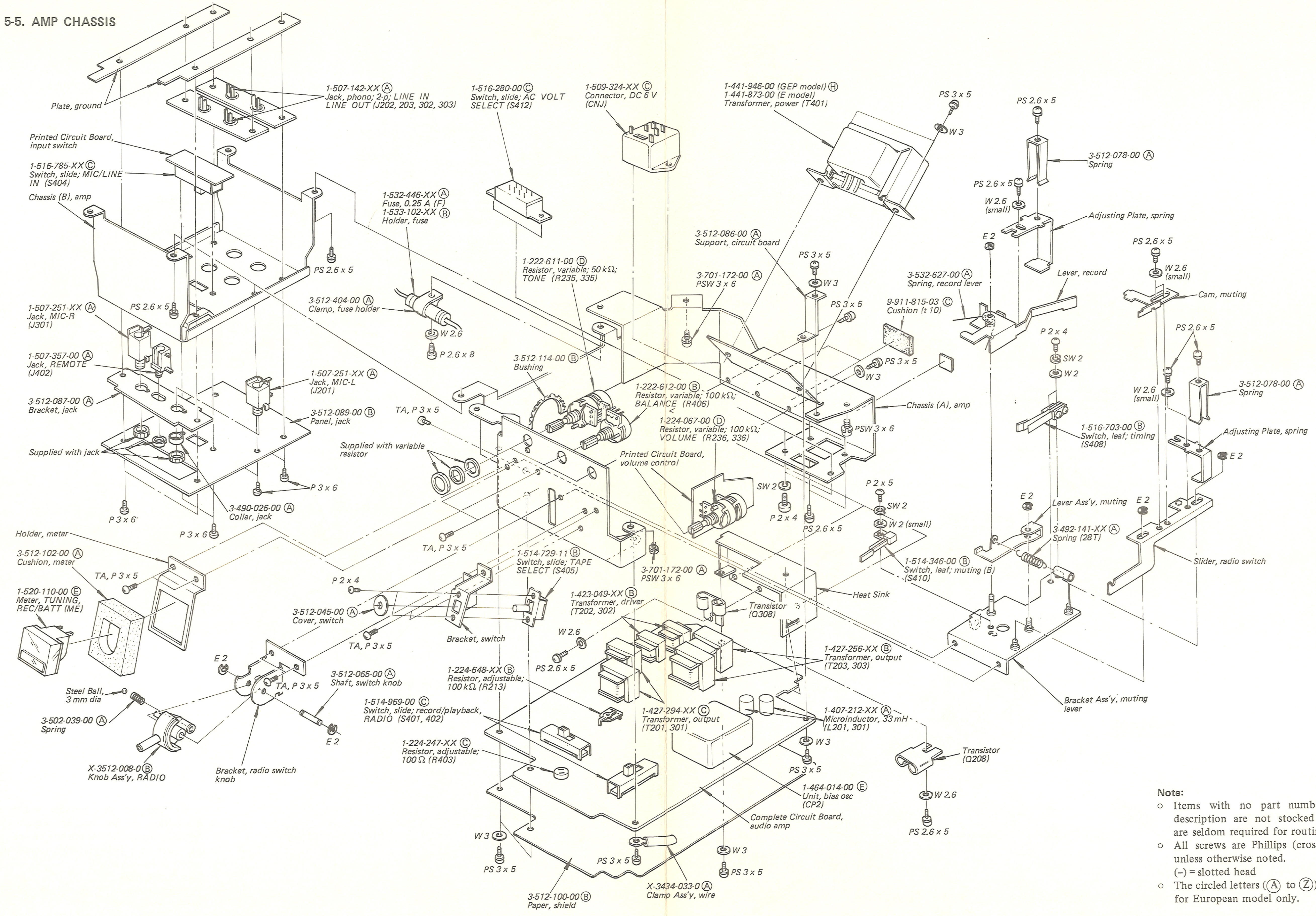
5-4. RADIO SECTION


P 2.6 x 3
P 2.6 x 8
SW 2.6
3-512-073-00 Ⓐ
Cover, shield
1-403-163-00 Ⓒ
Filter, ceramic
(CF101)
9-911-863-XX Ⓓ
Paper, shield
1-405-306-00 Ⓑ
Transformer, a-m osc
(T102)
1-403-801-00 Ⓑ
Transformer, a-m i-f
(T107)
1-403-273-00 Ⓑ
Transformer, fm discriminator
(T106)
TA, P 2.6 x 8
TA, P 2.6 x 8
W 2.6
X-3434-033-0 Ⓐ
Clamp Ass'y, wire
TA, P 2.6 x 8
W 2.6
TA, P 2.6 x 8
W 2.6
1-536-333-00 Ⓐ
Pin, terminal
3-532-611-00 Ⓐ
Lug
Coil, fm ant (L101)
Plate, shield
1-403-272-00 Ⓑ
Transformer, fm discriminator
(T105)
1-403-244-31 Ⓑ
Transformer, fm i-f
(T104)
1-425-548-00 Ⓔ
Unit, MPX decoder (CP1)
1-401-227-XX Ⓓ
Ferrite-rod Ant, a-m
(ANT2)
3-485-223-00 Ⓐ
Absorber
1-425-373-00 Ⓑ
Coil, fm rf (L102)
Complete Circuit Board,
radio
Complete Circuit Board,
MPX decoder
1-151-242-00 Ⓔ
Capacitor, tuning
(C108)
1-516-784-XX Ⓑ
Switch, slide; BAND
SELECT (A) (S101)
1-405-471-00 (E model)
1-425-533-00 (GEP model) Ⓐ
Coil, fm osc (L104)
Holder, lamp
1-403-243-00 Ⓑ
Transformer, fm i-f
(T103)
1-425-260-00 Ⓒ
Transformer, stereo
separation (T108)
P 3 x 18
P 2.6 x 5
1-403-242-00 Ⓑ
Transformer, fm i-f
(T101)
1-518-169-XX Ⓑ
Lamp, 4.5 V 40 mA
(PL)
1-409-181-00 Ⓑ
Coil, trap; 22 mH (L106)
9-911-825-32 Ⓒ
Dial Cord, 0.3 mm dia
Chassis, radio
Eyelet, 1.3 x 3
3-487-058-00 Ⓐ
Cover, lamp
3-512-070-11 (E model)
3-512-070-31 (GEP model) Ⓑ
Scale, dial
P 2.6 x 4
P 2.6 x 4
PS 2.6 x 5
W 2.6
1-514-641-00 Ⓑ
Switch, slide; STEREO/
MONO (S403)
3-512-068-00 Ⓐ
Spring
PS 2.6 x 5
W 2.6
TA, P 2.6 x 8
Rivet, P 2 x 8
3-839-611-00 Ⓐ
Pulley, dial cord
Complete Circuit Board,
band select switch
TA, P 2.6 x 8
W 2.6
3-512-045-00 Ⓐ
Cover, switch
1-516-778-XX Ⓒ
Switch, slide; BAND
SELECT (B) (S102)
SW 2
P 2 x 4
3-811-140-00 Ⓐ
Pulley, dial cord
1-514-729-41 Ⓑ
Switch, slide; AFC/ISS
(S103)
W 2.6
3-512-066-00 Ⓑ
Pointer, dial
Rivet, P 2 x 8
3-839-611-00 Ⓐ
Pulley, dial cord
Slider, band select
switch
Bracket Ass'y,
pulley
PS 3 x 5
Rivet, P2x8
3-839-611-00 Ⓐ
Pulley, dial cord
X-3434-033-0 Ⓐ
Clamp Ass'y, wire
3-512-069-00 Ⓐ
Drum, dial
TA, P 3 x 6
PS 3 x 5
Reinforcement, radio
chassis
W 3
P 3 x 6
9-911-825-52 Ⓒ
Dial Cord, 0.25 mm dia
E 2
X-3512-009-0 Ⓑ
Shaft Ass'y, tuning
Bracket, band select
switch knob
3-839-611-00 Ⓐ
Pulley, dial cord
P 3 x 6
3-430-219-00 Ⓐ
Spring
3-512-065-00 Ⓐ
Shaft, switch knob
X-3512-008-0 Ⓑ
Knob Ass'y, BAND
SELECT
TA, 3 x 5
Eyelet,
1.3 x 2.5
Rivet, P 2 x 8
E 2
3-502-039-00 Ⓐ
Spring
Steel Ball,
3 mm dia

Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- The circled letters (Ⓐ to Ⓩ) are applicable for European model only.

5-5. AMP CHASSIS


A
B
C
D
E
F
G
1
2
3
4
5
Plate, ground
1-507-142-XX Ⓐ
Jack, phono; 2-p; LINE IN
LINE OUT (J202, 203, 302, 303)
1-516-280-00 Ⓒ
Switch, slide; AC VOLT
SELECT (S412)
1-509-324-XX Ⓒ
Connector, DC 6 V
(CNJ)
1-441-946-00 (GEP model) Ⓗ
1-441-873-00 (E model)
Transformer, power (T401)
PS 3 x 5
W 3
PS 2.6 x 5
3-512-078-00 Ⓐ
Spring
Printed Circuit Board,
input switch
1-516-785-XX Ⓒ
Switch, slide; MIC/LINE
IN (S404)
Chassis (B), amp
1-532-446-XX Ⓐ
Fuse, 0.25 A (F)
1-533-102-XX Ⓑ
Holder, fuse
PS 2.6 x 5
W 2.6
(small)
Adjusting Plate, spring
PS 2.6 x 5
3-512-086-00 Ⓐ
Support, circuit board
E 2
PS 2.6 x 5
1-222-611-00 Ⓓ
Resistor, variable; 50 kΩ;
TONE (R235, 335)
PS 3 x 5
W 3
3-701-172-00 Ⓐ
PSW 3 x 6
3-532-627-00 Ⓐ
Spring, record lever
Lever, record
W 2.6
(small)
3-512-404-00 Ⓐ
Clamp, fuse holder
1-507-251-XX Ⓐ
Jack, MIC-R
(J301)
PS 2.6 x 5
PS 3 x 5
9-911-815-03 Ⓒ
Cushion (t 10)
Cam, muting
W 2.6
P 2.6 x 8
P 2 x 4
PS 2.6 x 5
1-507-357-00 Ⓐ
Jack, REMOTE
(J402)
3-512-114-00 Ⓑ
Bushing
PS 3 x 5
SW 2
W 3
W 2
1-507-251-XX Ⓐ
Jack, MIC-L
(J201)
1-222-612-00 Ⓑ
Resistor, variable; 100 kΩ;
BALANCE (R406)
3-512-078-00 Ⓐ
Spring
3-512-087-00 Ⓐ
Bracket, jack
3-512-089-00 Ⓑ
Panel, jack
TA, P 3 x 5
W 2.6
(small)
Chassis (A), amp
1-224-067-00 Ⓓ
Resistor, variable; 100 kΩ;
VOLUME (R236, 336)
PSW 3 x 6
1-516-703-00 Ⓑ
Switch, leaf; timing
(S408)
Adjusting Plate, spring
Supplied with variable
resistor
Supplied with jack
Printed Circuit Board,
volume control
E 2
P 3 x 6
SW 2
P 2 x 5
SW 2
P 3 x 6
3-490-026-00 Ⓐ
Collar, jack
P 2 x 4
PS 2.6 x 5
W 2 (small)
E 2
Lever Ass'y, muting
E 2
3-492-141-XX Ⓐ
Spring (28T)
P 3 x 6
Holder, meter
TA, P 3 x 5
1-514-346-00 Ⓑ
Switch, leaf; muting (B)
(S410)
Slider, radio switch
3-512-102-00 Ⓐ
Cushion, meter
TA, P 3 x 5
1-514-729-11 Ⓑ
Switch, slide; TAPE
SELECT (S405)
3-701-172-00 Ⓐ
PSW 3 x 6
P 2 x 4
Heat Sink
1-520-110-00 Ⓔ
Meter, TUNING,
REC/BATT (ME)
1-423-049-XX Ⓑ
Transformer, driver
(T202, 302)
Transistor
(Q308)
3-512-045-00 Ⓐ
Cover, switch
W 2.6
Bracket, switch
TA, P 3 x 5
PS 2.6 x 5
1-427-256-XX Ⓑ
Transformer, output
(T203, 303)
E 2
1-224-648-XX Ⓑ
Resistor, adjustable;
100 kΩ (R213)
3-512-065-00 Ⓐ
Shaft, switch knob
TA, P 3 x 5
Steel Ball,
3 mm dia
1-514-969-00 Ⓒ
Switch, slide; record/playback,
RADIO (S401, 402)
1-427-294-XX Ⓒ
Transformer, output
(T201, 301)
1-407-212-XX Ⓐ
Microinductor, 33 mH
(L201, 301)
Bracket Ass'y, muting
lever
3-502-039-00 Ⓐ
Spring
E 2
1-224-247-XX Ⓒ
Resistor, adjustable;
100 Ω (R403)
W 3
Transistor
(Q208)
PS 3 x 5
X-3512-008-0 Ⓑ
Knob Ass'y, RADIO
Bracket, radio switch
knob
1-464-014-00 Ⓔ
Unit, bias osc
(CP2)
W 2.6
Complete Circuit Board,
audio amp
PS 2.6 x 5
W 3
PS 3 x 5
W 3
PS 3 x 5
PS 3 x 5
PS 3 x 5
3-512-100-00 Ⓑ
Paper, shield
X-3434-033-0 Ⓐ
Clamp Ass'y, wire

Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- The circled letters (Ⓐ to Ⓩ) are applicable for European model only.

SECTION 6
ELECTRICAL PARTS LIST

Note: The circled letters (Ⓐ to Ⓩ) are applicable for European model only.

PRINTED CIRCUIT BOARD

Ref. No.	*Part No.*		*Description*
	1-539-812-00	Ⓐ	Bias Switch

SEMICONDUCTORS

Transistors

Ref. No.	*Part No.*		*Description*
Q101~105		Ⓑ	2SC710
⇒ Q106~109		Ⓑ	2SC634A
⇒ Q201,301		Ⓑ	2SC632A
⇒ Q202~207 Q302~307		Ⓑ	2SC634A
⇒ Q208,308		Ⓒ	BX324
Q209,309		Ⓑ	M8641A
⇒ Q401~403		Ⓑ	2SC634A
⇒ Q601		Ⓑ	2SC634A
Q602		Ⓑ	2SB475
Q603		Ⓑ	2SC1474

Diodes

Ref. No.	*Part No.*		*Description*
D101		Ⓑ	1T261
⇒ D102		Ⓑ	1S351M-1
D104,105		Ⓑ	1T261
⇒ D106~109		Ⓑ	1T22A
⇒ D110		Ⓑ	1S1555
D111~114		Ⓑ	1T22A
⇒ D201,301		Ⓑ	1S1555
⇒ D202,302		Ⓑ	1T22A
D401,402		Ⓑ	10D2
⇒ D601		Ⓑ	1S1555
D602		Ⓑ	10D2

COILS

Ref. No.	*Part No.*		*Description*
L102	1-425-373-00	Ⓑ	FM RF
L103	1-407-182-XX	Ⓐ	Microinductor, 2.2μH
L104	1-405-471-00	Ⓐ	FM Osc (E model)
	1-425-533-00	Ⓐ	FM Osc (GEP model)
L105	1-407-175-XX	Ⓐ	Microinductor, 330μH
L106	1-409-181-00	Ⓑ	Trap, 22 mH
L201,301	1-407-212-XX	Ⓐ	Microinductor, 33 mH
L601~603	1-407-484-00	Ⓐ	Microinductor, 3.3μH

⇒: Due to replacement parts, the descriptions are different on the schematic diagram.

TRANSFORMERS

Ref. No.	*Part No.*		*Description*
T101	1-403-242-00	Ⓑ	FM IF
T102	1-405-306-00	Ⓑ	AM Osc
T103	1-403-243-00	Ⓑ	FM IF
T104	1-403-244-31	Ⓑ	FM IF
T105	1-403-272-00	Ⓑ	FM Discriminator
T106	1-403-273-00	Ⓑ	FM Discriminator
T107	1-403-801-00	Ⓑ	AM IF
T108	1-425-260-00	Ⓒ	Stereo Separation
T201,301	1-427-294-XX	Ⓒ	Output
T202,302	1-423-049-XX	Ⓑ	Driver
T203,303	1-427-256-XX	Ⓑ	Output
T401	1-441-873-00	Ⓗ	Power (E model)
	1-441-946-00	Ⓗ	Power (GEP model)

CAPACITORS

All capacitors are in μF and of electrolytic unless otherwise noted. ($p = \mu\mu F$)
50 and/or less working voltages are not noted except for electrolytic type.

Ref. No.	*Part No.*		*Description*	
C101	1-102-958-11	Ⓐ	20p	ceramic
C102	1-102-965-11	Ⓐ	39p	ceramic
C103	1-102-940-11	Ⓐ	3p	ceramic (E model)
C104~106	1-101-918-11	Ⓐ	0.001	ceramic
C107	1-102-951-11	Ⓐ	15p	ceramic
C108	1-151-242-00	Ⓔ	tuning	
C109	1-102-941-11	Ⓐ	4p	ceramic
C110	1-102-973-11	Ⓐ	100p	ceramic
C111	1-102-950-11	Ⓐ	13p	ceramic (E model)
	1-102-958-11	Ⓐ	20p	ceramic (GEP model)
C112	1-102-923-11	Ⓐ	0.01	ceramic

Note: The circled letters (Ⓐ to Ⓩ) are applicable for European model only.

Ref. No.	*Part No.*				*Description*
C113	1-102-945-11	Ⓐ	8p		ceramic
C114	1-102-940-11	Ⓐ	3p		ceramic (E model)
	1-102-944-11	Ⓐ	7p		ceramic (GEP model)
C115	1-108-239-12	Ⓐ	0.01		mylar
C116	1-102-943-11	Ⓐ	6p		ceramic
C117,118	1-101-923-11	Ⓐ	0.01		ceramic
C119	1-121-413-11	Ⓐ	100	6.3V	
C120	1-108-242-12	Ⓐ	0.022		mylar
C121	1-101-918-11	Ⓐ	0.001		ceramic
C122	1-102-934-11	Ⓐ	1p		ceramic
C123	1-108-239-12	Ⓐ	0.01		mylar
C124	1-108-242-12	Ⓐ	0.022		mylar
C125	1-101-923-11	Ⓐ	0.01		ceramic
C126	1-103-605-11	Ⓐ	150p		polystyrol
C127	1-108-242-12	Ⓐ	0.022		mylar
C128	1-102-934-11	Ⓐ	1p		ceramic
C129	1-108-242-12	Ⓐ	0.022		mylar
C130	1-121-395-11	Ⓐ	4.7	25V	
C131	1-101-922-11	Ⓐ	0.0047		ceramic
C132	1-103-621-11	Ⓐ	680p		polystyrol
C133	1-121-469-11	Ⓐ	10	10V	
C134	1-102-935-11	Ⓐ	2p		
C135	1-108-242-12	Ⓐ	0.022		mylar
C136	1-108-242-12	Ⓐ	0.022		mylar
C137	1-121-469-11	Ⓐ	10	10V	
C138,139	1-103-608-11	Ⓐ	200p		polystyrol
C140	1-108-240-12	Ⓐ	0.015		mylar
C141	1-108-242-12	Ⓐ	0.022		mylar
C142	1-101-918-11	Ⓐ	0.001		ceramic
C144	1-108-242-12	Ⓐ	0.022		mylar
C145	1-121-420-11	Ⓐ	220	10V	
C146	1-127-020-11	Ⓐ	0.22	10V	solid aluminum
C147	1-127-019-11	Ⓐ	0.1	10V	solid aluminum
C148,149	1-108-239-12	Ⓐ	0.01		mylar
C150	1-107-137-11	Ⓐ	180p		silvered mica
C151	1-107-125-11	Ⓐ	56p		silvered mica
C152	1-121-469-11	Ⓐ	10	10V	
C153	1-121-402-11	Ⓐ	33	10V	
C154	1-121-413-11	Ⓐ	100	6.3V	
C155	1-108-237-12	Ⓐ	0.0068		mylar

Ref. No.	*Part No.*				*Description*
C156	1-121-402-11	Ⓐ	33	10V	
C157	1-121-391-11	Ⓐ	1	50V	
C158,159	1-121-414-11	Ⓐ	100	10V	
C160	1-103-575-11	Ⓑ	0.0047		polystyrol
C161,162	1-108-242-12	Ⓐ	0.022		mylar
C163,164	1-108-360-12	Ⓐ	0.039		mylar
C165~168	1-108-230-12	Ⓐ	0.0022		mylar
C169,170	1-108-228-12	Ⓐ	0.0015		mylar
C171,172	1-127-020-11	Ⓐ	0.22	10V	solid aluminum
C173,174	1-108-239-12	Ⓐ	0.01		mylar
C201,301	1-121-726-11	Ⓐ	0.47	50V	
C202,302	1-121-413-11	Ⓐ	100	6.3V	
C203,303	1-121-391-11	Ⓐ	1	50V	
C204,304	1-121-496-11	Ⓑ	10	10V	
C205,305	1-108-227-12	Ⓑ	0.001		mylar
C206,306	1-102-947-11	Ⓐ	10p		ceramic
C207,307	1-108-227-12	Ⓑ	0.001		mylar
C208,308	1-121-391-11	Ⓐ	1	50V	
C209,309	1-121-413-11	Ⓐ	100	6.3V	
C210,310	1-121-469-11	Ⓐ	10	10V	
C211,311	1-121-391-11	Ⓐ	1	50V	
C212,312	1-121-409-11	Ⓐ	47	16V	
C213,313	1-102-953-11	Ⓐ	18p		ceramic
C214,314 C215,315	1-121-469-11	Ⓐ	10	10V	
C216,316	1-121-413-11	Ⓐ	10	6.3V	
C217,317	1-108-361-12	Ⓐ	0.056		mylar
C218,318	1-102-965-11	Ⓐ	39p		ceramic
C219,319	1-108-232-12	Ⓐ	0.0033		mylar
C220,320	1-108-240-12	Ⓐ	0.015		mylar
C221,321	1-108-228-12	Ⓐ	0.0015		mylar
C222,322	1-107-115-11	Ⓐ	22p		silvered mica
C223,323	1-102-965-11	Ⓐ	39p		ceramic
C224,324	1-107-129-11	Ⓐ	82p		silvered mica
C225,325	1-108-230-12	Ⓐ	0.0022		mylar
C226,326	1-108-351-12	Ⓐ	0.0012		mylar
C227,327	1-107-051-11	Ⓐ	15p	500V	silvered mica
C228,328	1-107-001-11	Ⓐ	18p	500V	silvered mica
C229,329	1-107-052-11	Ⓐ	22p	500V	silvered mica
C230,330	1-107-053-11	Ⓐ	27p	500V	silvered mica
C231,331	1-108-239-12	Ⓐ	0.01		mylar

Note: The circled letters (Ⓐ to Ⓩ) are applicable for European model only.

Ref. No.	Part No.	Description			
C232,332	1-108-227-12	Ⓐ	0.001		mylar
C233,333	1-121-469-11	Ⓐ	10	10V	
C234,334	1-127-019-11	Ⓐ	0.1	10V	solid aluminum
C235,335	1-108-362-12	Ⓑ	0.082		mylar
C236,336	1-121-391-11	Ⓐ	1	50V	
C237,337	1-108-230-12	Ⓐ	0.0022		mylar
C238,338	1-121-413-11	Ⓐ	100	6.3V	
C239,339	1-127-025-11	Ⓒ	3.3	10V	solid aluminum
C240,340 C241,341	1-108-237-12	Ⓐ	0.0068		mylar
C242,342	1-109-973-11	Ⓐ	100p		ceramic
C401	1-121-968-11	Ⓑ	10	16V	
C402	1-121-425-11	Ⓑ	470	10V	
C403	1-121-414-11	Ⓐ	100	10V	
C404	1-121-395-11	Ⓐ	4.7	25V	
C405	1-121-395-11	Ⓐ	1	50V	
C410	1-121-414-11	Ⓐ	100	10V	
C411	1-121-425-11	Ⓑ	470	10V	
C412	1-107-035-11	Ⓐ	560p	500V	silvered mica
C413	1-129-702-11	Ⓐ	0.001	630V	plastic
C414	1-107-016-11	Ⓐ	470p	500V	silvered mica
C415	1-121-425-11	Ⓑ	470	10V	
C416,417	1-121-529-11	Ⓒ	2000	12V	
C418,419	1-108-266-12	Ⓐ	0.001		mylar
C420,421	1-102-973-11	Ⓐ	100p		ceramic
C601	1-121-651-11	Ⓐ	10	16V	
C602	1-121-419-11	Ⓐ	220	6.3V	
C603	1-121-420-11	Ⓐ	220	10V	

RESISTORS

All resistors are in ohms. Regular-type ¼W carbon resistors are omitted.
Check the schematic diagram for the resistance values. (k = 1000)

Ref. No.	Part No.	Description	
R213	1-224-648-XX	Ⓑ	100 k, adjustable
R235,335	1-222-611-00	Ⓓ	50 k, variable; TONE
R236,336	1-224-067-00	Ⓓ	100 k, variable; VOLUME
R403	1-224-247-XX	Ⓒ	100, adjustable
R406	1-222-612-00	Ⓑ	100 k, variable; BALANCE
R602	1-224-642-XX	Ⓑ	1 k, adjustable

SWITCHES

Ref. No.	Part No.	Description	
S101	1-516-784-XX	Ⓑ	Slide, BAND SELECT (A)
S102	1-516-778-XX	Ⓒ	Slide, BAND SELECT (B)
S103	1-514-729-41	Ⓑ	Slide, AFC/ISS
S401,402	1-514-969-00	Ⓒ	Slide, record/playback, RADIO
S403	1-516-143-XX	Ⓑ	Slide, STEREO/MONO
S404	1-516-785-XX	Ⓒ	Slide, MIC/LINE IN
S405	1-514-729-11	Ⓑ	Slide, TAPE SELECT
S406	1-516-853-XX	Ⓒ	Leaf, power
S407	1-513-273-00	Ⓑ	Slide, bias
S408	1-516-703-00	Ⓑ	Leaf, timing
S409,410	1-514-346-00	Ⓑ	Leaf, muting (A, B)
S411			Included in CNJ
S412	1-516-280-00	Ⓒ	Slide, AC VOLT SELECT

JACKS

Ref. No.	Part No.	Description	
J101	1-507-412-XX	Ⓑ	EXT ANT
J201,301	1-507-251-XX	Ⓐ	MIC-L, R
J202,302 J203,303	1-507-142-XX	Ⓐ	Phono, 2-p; LINE IN, LINE OUT
J401	1-507-476-XX	Ⓑ	HEADPHONE
J402	1-507-357-00	Ⓐ	REMOTE
CNJ	1-509-324-XX	Ⓒ	Connector, DC 6V

MISCELLANEOUS

Ref. No.	Part No.	Description	
ANT1	1-501-072-00	Ⓔ	Antenna, telescopic
ANT2	1-401-227-XX	Ⓓ	Antenna, a-m ferrite-rod
CF101	1-403-163-00	Ⓒ	Filter, ceramic
CF102	1-527-184-XX	Ⓑ	Filter, ceramic
CP1	1-425-548-00	Ⓔ	Unit, MPX decoder
CP2	1-464-014-00	Ⓔ	Unit, bias osc
EH	8-825-506-00	Ⓓ	Head, erase (EF135-36)
F	1-532-446-XX	Ⓐ	Fuse, 0.25A
M	8-834-009-50	Ⓚ	Motor, DNF-1300A

Note: The circled letters (Ⓐ to Ⓩ) are applicable for European model only.

Ref. No.	*Part No.*	*Description*
ME	1-520-110-00	Ⓔ Meter, TUNING, REC/BATT
MIC201,301	8-814-191-10	Ⓕ Microphone, electret condenser; C-1002S
PL	1-518-169-XX	Ⓑ Lamp, 4.5 V 40 mA
RPH201,301	8-829-236-24	Ⓚ Head, record/playback; PP128-3602D
SP201,301	1-502-341-00	Ⓔ Speaker, front
SP202,302	1-502-342-00	Ⓔ Speaker, side
	1-507-902-XX	Ⓐ Nut, jack
	1-533-102-XX	Ⓑ Holder, fuse
	1-536-333-00	Ⓐ Pin, terminal

ACCESSORIES AND PACKING MATERIALS

Part No.	*Description*
X-3701-018-2	Ⓐ Tips Ass'y, cleaning
1-526-565-00	Ⓑ Adaptor, ac plug (E model)
1-528-022-00	Ⓑ Battery, size "D" (IEC Designation R20)
1-534-518-00	Ⓓ Cord, power (E model)
1-534-818-XX	Ⓔ Cord, power (GEP model)
3-512-108-00	Ⓐ Spacer
3-512-109-00	Ⓒ Cushion
3-512-110-00	Ⓒ Cushion
3-512-714-00	Ⓓ Carton
3-532-616-00	Ⓑ Bag, plastic; unit
3-780-999-51	Ⓔ Manual, instruction
3-793-010-00	Ⓐ Booklet, TAPE TALK
3-793-828-11	Ⓐ Card, caution; cassette
8-893-506-00	Ⓕ Tape, demonstration; CD-803

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